

# QualityWindow

The continuous improvement software



## Quality Window 6

**Getting Started Guide**

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## Overview

This guide is designed to help new administrators set up and prepare Quality Window for first use. It provides the essential steps for installing and configuring the core system components — the License Server, Shared Configuration, and Security — so that production and quality teams can begin collecting and analyzing data quickly and consistently.

The intended audience includes Quality or Process Engineers, Supervisors, and IT or Technical Support staff who are responsible for managing system setup, user access, and shared data locations. While the setup process does not require deep IT expertise, coordination with your organization's IT department may be needed to create shared network folders, configure Windows security permissions, and install the License Server on an appropriate system.

Each section of this guide introduces a key component of the Quality Window environment and provides the minimum steps required for a functional deployment. References to related administration guides are included throughout for those who want additional technical detail or screenshots.

Once setup is complete, administrators can continue to the “Building a Quality Window Application” section to create the first data collection templates for production or laboratory use.

## Before You Begin

Before starting the installation and configuration steps, review these requirements and recommendations to ensure a smooth setup. Quality Window is flexible and can operate in a range of environments, but a few key preparations will make deployment faster and more reliable.

### Operating System and Permissions

Quality Window supports Windows 11 and Windows Server 2019 or later. Administrator permissions are required to install the software, configure security, and create shared folders. Workstations used for day-to-day data collection may operate under standard user accounts.

### Network and Storage

Quality Window relies on shared network folders for applications and configuration files. Work with your IT team to identify or create a secure, backed-up location on your network. All workstations should have permission to read and write to this shared folder.

For best performance, map the shared location to the same drive letter (for example, Q:\Quality Window) across all devices.

### License Server

If your organization uses concurrent licensing (most common), you will need access to the [Quality Window License Server software](#) and a valid license key. The License Server should be installed on a computer that remains powered on and connected to the same network as your workstations.

If you are setting up a standalone workstation, the license can be activated locally, and this step can be skipped.

## IT Collaboration

Although installation is straightforward, IT support may be needed to:

- Install or verify the License Server service
- Configure network and folder permissions
- Validate firewall rules for the License Server port

## Documentation and Resources

This guide focuses on initial setup and best practices. Each major topic references a supporting administration guide for more detail:

- [Quality Window License Server Install and Administration Guide](#)
- [Shared Configuration in Quality Window – Administration Guide](#)
- [Quality Window Security – Admin Guide](#)

# Installing and Configuring Quality Window

Setting up Quality Window for the first time involves three main components: the License Server, the Shared Configuration, and Security. Together, these ensure a consistent, secure, and maintainable Quality Window environment for all users.

This section provides clear guidance on each step and points to the related administration guides for more detailed instructions.

## Step 1 – Install the License Server

The Quality Window License Server manages concurrent license seats and distributes shared configuration settings to all connected workstations. It must be installed on a Windows 11 or Windows Server 2019 (or newer) system that remains powered on and accessible across the network.

Download the latest [License Server installer](#) from Busitech website. Run the setup and follow the prompts to complete the installation. After the installer finishes, open the License Server Admin tool.

In the License Server Admin you can

- Enter your product key.
- Assign the TCP port for client connections (default 5555).
- Verify that the service is configured to start automatically.
- Confirm network and security settings under the General and Products tabs.
- Configure users default data directory and shared configuration path

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For best results, install the License Server on the same device that stores your shared Quality Window files. This reduces latency and simplifies management.

Refer to the [Quality Window License Server Install and Administration Guide](#) for step-by-step installation, port configuration, and firewall setup details.

### Firewall Validation

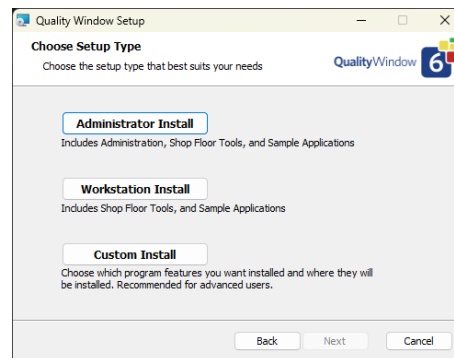
Quality Window requires two-way communication between the License Server and all client workstations. During installation, a Windows Firewall exception is normally created automatically. Verify that the exception is present and applies only to your Private Network.

If the exception is missing, manually create an inbound rule for the License Server executable and its configured TCP port. If your organization uses third-party network protection, ensure similar allowances are made.

See the [License Server Administration Guide](#) for firewall verification and troubleshooting steps.

## Step 2 – Install Quality Window on an Administrator Workstation

Install the Quality Window “Administrator Install” software on one workstation that will act as the administrator system for configuration and validation. Use [the latest installer available](#) from Busitech.



*Installation Options*

If the License Server is not yet active, Quality Window will run using a temporary 30-day workstation license that is automatically included with a new installation. This trial license allows administrators to begin configuration and testing immediately.

If Quality Window has been installed previously and the temporary license has already expired, a new temporary key must be requested from Busitech Support before continuing.

The administrator workstation configured under this license will later be used to set up the Shared Configuration and Security once the License Server becomes available.

### Step 3 – Create a Consistent File Structure

Quality Window uses shared folders to organize applications and configuration files. Establish a single network location accessible by all users, such as

Q:\Quality Window

Or

\\MyFileServer\Quality Window

Inside that location create two folders

- QW Config – for shared configuration files such as rules, units, statistics, scripts, and the security database
- QW Data – for application files, IO files, popups, help content, and archived data

All client computers should map the same drive letter to this shared location and have full Read and Write permissions. Use IT policies or login scripts to maintain consistent mapping for all users.

#### Example layout



Keep folder names simple and descriptive so operators can easily recognize them on the Open Application screen.

Refer to the [Shared Configuration in Quality Window – Administration Guide](#) for storage layout recommendations and examples.

### Step 4 – Configure Shared Configuration

Open Quality Window Admin and launch the Shared Configuration Manager. Update the following fields

- Shared Configuration Path – for example Q:\Quality Window\QW Config
- Default Data Directory – for example Q:\Quality Window\QW Data
- Installation Directory – **leave at default unless directed by Busitech Support**

Click Save to copy local configuration files to the shared path. Each item in the list should display a green checkmark when published successfully.

Refer to the [Shared Configuration in Quality Window – Administration Guide](#) for full instructions and screenshots of the setup process.

## Step 5 – Enable Automatic Shared Configuration Distribution

To ensure every workstation automatically receives the correct configuration paths, open the License Server Admin and select the Products tab. Edit your Quality Window product entry and enter the Shared Path and Data Path values that match your network locations.

When workstations connect to the License Server, Quality Window will detect differences between local and server paths and prompt users to update them automatically.

Details on this process are available in both the [License Server Administration Guide](#) and the [Shared Configuration Administration Guide](#).

## Step 6 – Configure Security

Security ensures that only authorized users can access administrative tools and modify applications. Open Quality Window Admin and select the Security Administrator.

Perform the following actions

- Enable Windows Authentication by default in Tools → Options so users sign in using their Windows credentials.
- Create at least two administrator accounts: one primary and one backup.
- Define roles and permissions for Administrators, Supervisors, and Operators.
- Restrict access to Quality Window Admin and the Spec Manager to authorized administrators only.

Document assigned roles and permissions to support audits and onboarding of new users.

Refer to the [Quality Window Security – Admin Guide](#) for detailed setup instructions and explanations of all security options.

## Broader Deployment Across Your Network

Once the administrator workstation and Shared Configuration are fully set up, the next step is deploying Quality Window to the remaining devices in your environment. This deployment work is typically handled by your IT team using standard MSI installation practices.

IT teams can install Quality Window manually or automate the process using Microsoft Installer commands or PowerShell. The MSI package supports silent installation, custom installation folders, and administrator-tool options for workstations that require configuration access. For larger environments, Busitech also provides an automation script that can silently install Quality Window, apply License Server settings, and set Shared Configuration paths. The script is designed for IT use and supports both workstation installs and administrator installs.

For environments using the License Server, workstations only need the server address during first launch. After connecting, Quality Window will automatically detect and update Shared Configuration paths based on the values stored in the License Server. This keeps all workstations consistent without manual configuration.

Full installation examples, automation options, and PowerShell usage are available in the following IT resources:

- [Quality Window 6 Installation Automation – Usage Guide](#)
- [QW 6 Install Instructions – Recommended Network Deployment Guide](#)

These resources provide the command-line syntax, automation parameters, and recommended deployment practices your IT team may need for broader rollout.

## Next Steps

Your Quality Window environment is now installed, licensed, and secured. Continue with Building a Quality Window Application to define variables, establish limits, and configure control rules.

If any workstation cannot connect to the License Server, review the troubleshooting section in the [License Server Administration Guide](#) for connection, firewall, and network checks.

## Building a Quality Window Application

After completing installation and configuration, the next step is to build a working Quality Window application. This section guides administrators through the process of creating an application from planning to validation. By the end, you will be able to design, test, and maintain your own applications confidently.

For many administrators, this is the point where Quality Window starts to come alive—translating process knowledge into a living digital tool that measures, visualizes, and improves performance.

## Understanding What an Application Is

A Quality Window application defines how and when data is collected, what information is stored, and how that data is evaluated. It provides a structured way to capture meaningful information and turn it into insight for improvement.

**IMPORTANT: Quality Window is not designed to be a long-term data warehouse or storage system.** *It is built for active analysis — a tool for seeing what is happening now and what has recently changed. The intent is to help teams recognize variation, investigate causes, and make timely decisions. Once the data has served its purpose, it can be archived or summarized elsewhere for long-term records.*

This approach allows Quality Window to stay fast, focused, and easy to use, without the overhead of managing massive data stores. The power of the system comes from how well it represents your current process behavior, product quality, or event performance — not from how much data it holds.

All applications in Quality Window share the same basic structure of variables, limits, rules, and sampling plans, but they can be designed for different purposes depending on what information your organization needs to understand or control.

### Process Data Applications

Used to monitor running conditions and detect variation early. Typical examples include temperature, pressure, weight, or speed readings. These applications help maintain consistency and identify shifts before product performance is affected.

### Quality Data Applications

Used to record test or inspection results for finished goods, samples, raw material testing, or in-process material. They verify compliance to specifications and provide traceability for reporting and Certificates of Analysis.

### Event Analysis Applications

Used to capture information about discrete occurrences such as downtime, defects, or maintenance events. They help quantify impact, qualify key details, uncover root causes, and guide improvement actions. Combining quantitative information (such as minutes down or products rejected) with qualitative information (such as root cause, shift, team, line, or product) adds value when reviewing events in the Trieto chart by supporting root cause determination and prioritizing action plans.

### How Event Analysis Integrates with Other Applications

Identified root causes from downtime and defects can highlight additional checks that should be included in related process or quality applications, such as new variables, popup questions, or other inputs that help prevent recurrence. Event-focused applications follow the same build process as other application types and can coexist in the same Quality Window environment, allowing administrators to monitor both quantitative and qualitative aspects of performance across the production process.

## Step 1. Planning the Application

Planning is the most important part of creating a Quality Window application. A well-planned application captures the information that truly matters, updates often enough to see change, and stays simple enough for operators to use consistently.

**Reminder:** Before beginning, remember that Quality Window is designed for active analysis — not for indefinite data storage. The goal is to collect and interpret recent data that represents current process or product conditions so that decisions can be made quickly. Long-term record keeping or large-scale data archiving should be handled in other systems.

Start planning by deciding which type of data you are collecting and how it will be used. Quality Window supports three primary use cases:

### **Process Data Applications**

These monitor continuous or routine process conditions such as temperature, pressure, or fill weight. Data is typically collected at a set frequency or interval. The purpose is to detect variation early and maintain stable operation.

### **Quality Data Applications**

These record product inspection or test results, either in-process or at final release. The data verifies that material meets specifications and provides traceability for reports or Certificates of Analysis.

### **Event Analysis Applications**

These record downtime, rejects, or other unplanned events. They combine numeric values, such as minutes or counts, with descriptive information such as cause, shift, or machine. The goal is to identify where problems occur most often and their overall impact.

Once you have identified the application type, outline the following details:

- The purpose of the data being collected and how it will be used.
- The key variables needed to describe each record.
- Who will enter and who will review the data.
- The expected sampling frequency or event rate.
- How long data will remain in the active file before being archived.
- Any devices or systems that will provide input automatically.
- Reports or dashboards that will be required for review or compliance.

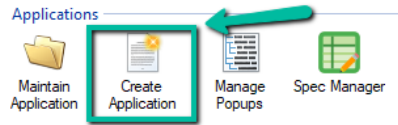
If this is your first build, start small. Create a simple version of one process, product, or event type and verify that users can easily enter data and that the results make sense. Once the structure works, you can expand it across additional lines or areas.

A well-planned application forms the backbone of a stable and repeatable data collection environment. Taking time to define scope, frequency, and purpose early will prevent rework later and ensure that Quality Window remains focused on analysis and improvement rather than storage.

## **Step 2. Creating the Application in QW Admin**

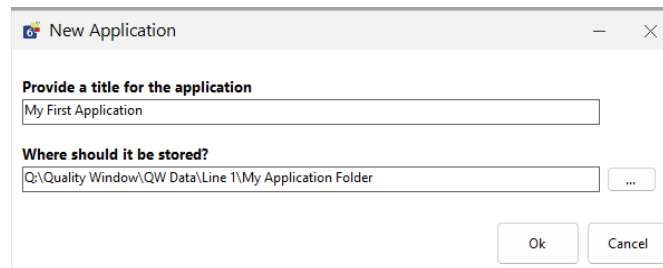
Click the Create Application Icon on the QW Administrator Dashboard found in the Applications section.

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*Create Application Icon in QW Administrator*

When you create a new Quality Window application, the first step is to give it a name and choose where it will be stored. After saving, QW Admin opens to the Variable workspace, where you will begin designing the application. These initial steps establish the identity of the application and place it in the correct shared location used by your team.



*New Application Dialogue*

**Application Title** – When you click Create Application, Quality Window prompts you for a title. Use a clear, recognizable name that matches how operators identify the process. This title appears in the Workstation title bar and in the Open screen.

**Storage Location** – After entering a title, Quality Window prompts you to choose where the application file should be saved. Place the file in the correct folder under your shared QW Data location to ensure all workstations can access it and to maintain a clean folder structure for operators.

### Quick Orientation

After the application file is created, QW Admin opens directly to the Variable workspace. Before adding variables, it helps to understand the layout of this screen. Two navigation areas are central to working in QW Admin: Admin Tabs and the Toolbar Actions. The Admin Tabs let you move between different parts of the application configuration, and the Toolbar provides quick access to common actions and navigation tools. A basic understanding of these areas will make it easier to build and maintain your application.

#### Admin Tabs

The Admin tabs organize the major areas of QW Admin. Each tab focuses on a specific part of application configuration and helps administrators move between variable details, application settings, and supporting content.

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Variable View			Grid View	General View	Change Log	Message Log	Report Documents
V#	Name	Type	Variable Details				
1	Date	Text	Variable Number	1			
2	Time	Text	Variable Name	Date			
			Display Length	8			

Admin Tabs

**Variable View** – The main workspace for creating and editing variables. Selecting a variable shows all of its properties in the details panel.

**Grid View** – Displays all variables in a table format, making it easy to scan or compare settings across the application.

**General View** – Shows application-level settings such as default screens, the number of historical records to load, and other high-level behaviors.

**Change Log** – Tracks administrative changes made to the application configuration. This log does not record data-entry changes.

**Message Log** – Allows administrators to provide update notes or instructions to operators. When enabled (on by default), QW Admin prompts administrators to enter a message after each successful save. Operators see these messages in QW Workstation when they open the application.

**Report Documents** – Manages the application’s Report Documents, including Certificates of Analysis and other generated reports. Administrators can add, edit, and organize report templates from this tab.

### Toolbar Actions

The toolbar provides quick access to common tasks and navigation controls used throughout application development. These actions help administrators add variables, move through the variable list, review references, and perform advanced functions.



Admin Toolbar

**Add New Variable** – Creates a new variable. The dropdown allows choosing the variable type, with Text as the default.

**Filter Variables** – Filters the variable list to help locate variables in large applications.

**Copy** – Copies the selected variable’s settings for reuse.

**Paste** – Pastes copied variable settings into another variable.

**Delete Variable** – Removes the selected variable from the application.

**Undo** – Reverts the last action performed in QW Admin.

**First Variable** – Navigates to the first variable in the list.

**Previous Variable** – Moves to the variable immediately before the current one.

**Current Variable Index** – Displays the current variable position and total variable count.

**Next Variable** – Moves to the next variable in the list.

**Last Variable** – Navigates to the final variable in the list.

**Open Application Script Editor** – Opens the script editor for managing application-level scripts.

**Create File Package** – Generates a portable file package for deployment, backup, or review.

**View Application Files and Security** – Opens the application folder and associated security settings.

**Show Variable References** – Displays where the selected variable is referenced in other variables or application properties.

**Open in QW Workstation** – Launches the application directly in Quality Window Workstation.

**Help** – Opens help resources related to QW Admin.

Learn More:

Video Tutorials:

- [Introduction to QW Admin](#)
- [Maintain Applications](#)

### Step 3. Defining Variables and Their Types

Variables are the foundation of every application. Each variable stores one type of information per record, such as a measurement, a batch number, an operator ID, or a reason code. Choosing the correct variable type ensures that data is recorded accurately, interpreted correctly, and displayed in a meaningful way.

#### Text Variables

Used for identifiers or descriptions that are not charted, such as Batch Number, Product ID, or Comment. Text variables should be long enough to hold the largest expected entry. They are also used to store dates, times, and file links by applying the appropriate unit of measure.

#### Numeric Variables

Used for measured values such as weight, temperature, or pressure. Numeric variables support limits, rules (alarms), and charting. Define appropriate decimal places and realistic range boundaries to prevent data-entry errors.

#### Calculated Variables

Used for derived results such as averages, differences, efficiencies, or combined expressions. Enter the formula in the Calculation field. Calculated variables can also have limits and rules, allowing them to behave like numeric variables.

**Learn more:** [Calculated Fields Formulas and @functions guide](#)

#### Average Variables

Automatically average a set of entered values. These exist primarily for legacy applications; Calculated variables now provide more flexibility and are generally preferred for new designs.

## Range Variables

Calculate the difference between the highest and lowest values collected in an Average variable. This type is useful for part-to-part variation when Average variables are used. If your application does not use Average variables, Range variables are not needed.

## Popup Variables

Provide a controlled list of predefined selections, improving consistency and reducing typing errors. Popups are commonly used for Shift, Team, Machine, Root Cause, or other controlled descriptors. Popup hierarchies can be single-level or multi-level (tree structures) to guide users through related choices.

## Lookup Variables

Display additional information that is tied to a popup selection. Lookups can show parent popup values or any column from a popup definition since popups support multiple stored fields per item. Lookup variables are always read-only.

## Follow these variable design guidelines:

**Variable Naming** – Use consistent naming across all variables, and include units of measure in the name when it helps clarify what the value represents.

**Underscore Behavior** – Underscores in variable names force a line break and visually group related variables. Variables that share the same underscore structure form header-like groupings, similar to merged cells in Excel. For the grouping to appear, the variables must be placed beside each other in the variable order.

For example, naming variables *Group1\_Group2\_Number1*, *Group1\_Group2\_Number2*, and *Group1\_Group3\_Number3* and positioning them consecutively will render the following grouped headers for easier reading.

Group1		
Group2		Group3
Number1	Number2	Number3

*Example of Header Grouping using Underscores*

**Range Controls** – Define realistic minimum and maximum values for numeric variables to prevent users from entering data outside acceptable boundaries.

**Protected Setting** – Marking a variable as Protected makes it read-only during data entry. Typically used when data is coming from an external source such as QW DataHub or an IO file.

**Required Setting** – Marking a variable as Required ensures users must enter a value before they can save the record.

## Step 4. Setting Limits, Rules, and Alarms

Limits define how Quality Window evaluates a process and how it visualizes results in both the Logsheet and control charts. When limits are set correctly, operators can instantly understand whether a value is good, drifting, unstable, or out-of-spec.

### Limit Types

Quality Window supports four limit types: Specification, Control, Warning, and Target. These limit zones determine the cell background colors in the Logsheet and the colored bands on control charts. Limit values are also used for limit-based statistics. These colors escalate from good (green) to severe (yellow and red) and finally to the highest-severity state, white or white-hot.

**Specification Limits (White)** – These define the acceptable boundaries for a process or product. Values outside these limits indicate a defect or reject condition. In the Logsheet, values that fall beyond specification limits appear with a white background. On control charts, the outermost bands are white. This represents the highest-severity condition.

**Control Limits (Red)** – Control limits mark the statistically derived boundary for process stability. Values outside control limits appear with a red background and are visually shown in red bands on charts. These excursions signal that the process has shifted or become unstable even if product is still technically in spec.

**Warning Limits (Yellow)** – Warning limits mark the zone between Target and Control. Values falling into this zone appear yellow in the Logsheet. On charts, the yellow bands help operators see when the process is trending toward instability.

**Target (Green)** – The desired or ideal operating value. Values near Target are shown in green. The center region of control charts is also green, giving operators an immediate indication of normal operation.

### Fixed, Blank, and Calculated Limits

**Fixed** – Limits are entered manually. These do not change based on data and are often used for regulatory or customer-defined specifications. Administrators enter the exact values.

**Blank** – Limits are not used. When blank, a variable will not colorize based on limit zones and no limit-driven rules or alarms will trigger.

**Calculated** – Limits are derived automatically from the data currently loaded in the Logsheet. As explained in the [Limits guide](#) (page 4), calculated limits adjust whenever filters change or new data is added, because limits are always based on the active in-memory population. Calculated limits are ideal for process-based control where the recent behavior of the process matters more than fixed targets.

### How Limits Affect Operators

**Logsheet Colors** – Cell backgrounds change based on where a value falls within the limit zones. Green indicates stable performance, yellow signals drift, red indicates instability, and white

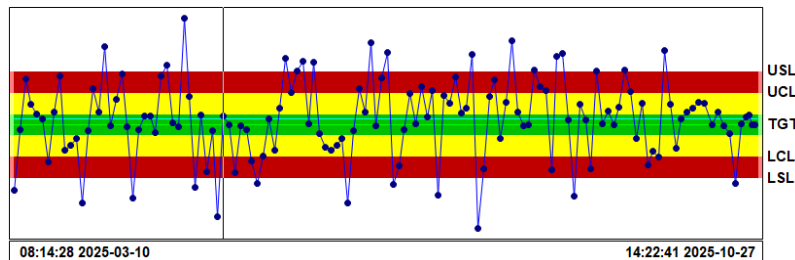
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identifies values outside specification limits. This colorization provides immediate visual feedback without needing to read every number. The examples shown in the Limits guide (page 3) illustrate how operators can interpret color at a glance.

402	4.9	5.7	5.1	5.5
400	7.5	7.8	7.9	7.7
500	6.2	4.5	7.6	6.1

*Logsheet colour example*

**Control Charts** – Charts show colored limit bands that correspond to the same zones as the Logsheet. This makes it easy to see patterns, excursions, and trends in context. Green bands indicate normal operation; yellow, red, and white bands help operators interpret severity quickly.



*Control Chart Example*

**Statistics and Limits** – Many of Quality Window’s statistics depend directly on the limit structure assigned to each numeric or calculated variable. Statistics such as percent above the upper control limit, percent below the lower specification limit, zone-based performance, and capability-style summaries all use the Target, Warning, Control, and Specification Limits to classify data. When limits change—especially when using calculated limits—the associated statistics update automatically to reflect the new limit boundaries. For reference, see the [Quality Window Statistics Guide](#) for descriptions of how each statistic interprets limit zones.

[Learn More](#)

### PDF Guides:

- [Setting Variable Limits Guide](#)
- [Quality Window Statistics Guide](#)

### Support Articles:

- [Getting the most out of your Control Limits](#)
- [Using Views to set specific limits](#)

## Rules and Alarms

Rules and alarms help identify early signs of process instability by detecting patterns or shifts that may not yet appear as limit violations. While limits highlight the severity of individual values, rules reveal trends and repeated behaviors across multiple data points, allowing operators to take action before issues escalate.

**Rules** – Rules evaluate sequences of numeric or calculated values. Examples include consecutive points above or below the mean, trends, or repeated increases or decreases. Rules focus on patterns rather than single measurements, making them effective for identifying subtle process changes.

**Alarms** – When a rule is violated, Quality Window adds an alarm entry to the Alarm screen. After saving a record that triggers a rule, Quality Window automatically navigates the user to the Alarm screen so they can review what occurred and document any corrective action. If email alerts are configured for the application, an email notification will also be sent when an alarm is triggered.

**Enable only the rules** that are meaningful for your process. Activating too many rules can generate unnecessary alarms, leading operators to ignore them and reducing the effectiveness of early-warning indicators.

**Relationship to Limits** – Rules may incorporate limit zones as part of their pattern checks, but they do not modify limit-based colorization. The Logsheet and Control Chart continue to use the variable’s defined limit types for color feedback regardless of rule activity.

**Learn more**

**Video Tutorials:**

- [Using the Alarm Screen](#)
- [SPC Rules and Alarms Management](#)
- [Configuring Email Settings for SPC Email Alerts](#)

**PDF Guides:**

- [Quality Window Statistics Guide](#)
- [Setting Variable Limits](#)
- [Rules and Alarms Admin Guide](#)
- [Email Notifications – Admin Guide](#)

**Step 5. Defining a Sampling Plan**

Sampling plans determine how often each variable should be collected and how the Add Record screen guides operators during entry. Each variable has a Sampling Plan value that defines its collection frequency and interacts with the Required setting to ensure sampling expectations are met.

**Sampling Plan Property** – Each variable is assigned a numerical sampling value. A value of 1 means the variable is expected on every new record. A value of 2 means it is expected every second record. Higher values correspond to less frequent sampling. A value of 0 means the variable is always optional.

10	Oven_Temp._(F)	Numeric	Required	No
11	Weight_Lane 1_(gm)	Numeric	Protected	No
			Sampling Plan	1

*Example Sampling Plan Property*

**Color Indicators on the Add Screen** – Each variable displays a color-coded reference number that tells the operator whether a value is needed at that moment. White means a value is requested now based on the sampling plan. Red means a value is required before saving because the variable is both Required and due. Blue means the variable is not currently due, either because its sampling plan is 0 or because the sampling interval has not yet been reached. If a sample is not due, then blue.

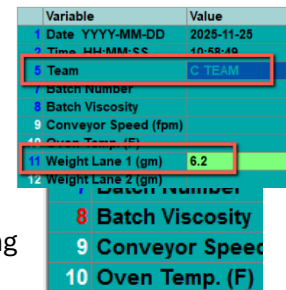
**Required and Sampling Interaction** – Required applies only when the sample is due. A Required variable with a sampling plan of 2 must be entered every second record. When the sample is not due, the variable appears in blue and operators are not blocked from saving.

10	Oven_Temp_(F)	Numeric	Required	Yes
11	Weight_Lane 1_(gm)	Numeric	Protected	No
			Sampling Plan	2

*Example Sampling Plan with Required properties*

**Automation Tools** – Sampling Plans apply only to manual data entry in Quality Window Workstation. Automated data collection tools, such as QWAdd.exe, do not evaluate sampling plan settings and will write data regardless of sampling frequency. Sampling rules should therefore be configured with operator workflows in mind, not automated input processes.

**Effective Sampling Strategy** – Set sampling values based on process needs. Critical or unstable variables should be sampled frequently with lower sampling values. Stable variables can use higher sampling values. Variables intended for optional comments or notes should use a sampling plan of 0. Sampling plans should be reviewed regularly and adjusted as process behavior changes. When troubleshooting or monitoring instability, increasing sampling frequency can provide better insight; once stability is confirmed, sampling frequency can be reduced to avoid unnecessary data collection.



**Learn More**

**Support Article:**

- [Refining Sampling Plans for Effective Statistical Process Control \(SPC\)](#)

**Step 6. Working with Input and Output Files**

Input and Output Files allow Quality Window to retrieve or publish values as part of the Add Record process. They help automate data collection, reduce manual entry, and integrate QW with external systems. Each variable can define a single Input File and a single Output File.

5	Team	Popup	Protected	No
6	Team_Leader	Lookup	Sampling Plan	0
7	Batch_Number	Text	Convert to Capital Letters	Yes
			Input File	TEAM.IO
8	Batch_Viscosity	Numeric	Output File	TEAM.IO

*Example Input/Output file properties*

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**Input Files** – Input Files retrieve a value before the Add screen is rendered. Quality Window reads a single value from the defined source and places it into the variable. If the variable is not marked as Protected, the operator can override the value manually. Input Files do not trigger when editing existing records.

**Output Files** – Output Files write a single value to a text file when the record is saved. This allows downstream systems, scripts, or automation routines to consume the latest value after data entry is complete. Output Files only update on Save.

**Basic I/O Format** – Input and Output Files use simple one-line text files. The file contains only the value; QW reads the text during Add and writes the text during Save. This lightweight format makes it easy to integrate scales, scanners, scripts, or custom applications.

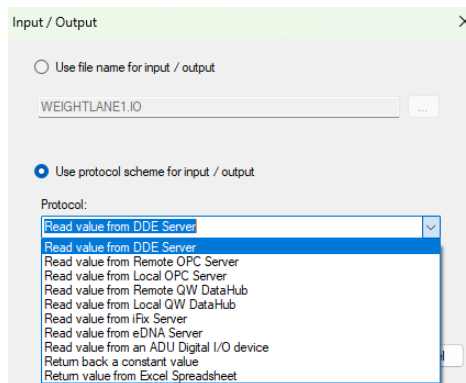
**RS-232 Devices** – Many bench instruments such as scales, gauge mics, calipers, torque testers, and other lab or production devices send their readings over RS-232. Quality Window includes a built-in utility, that listens to the serial device and writes the most recent reading to an IO File. This file can then be used as the Input File for a variable, allowing QW to pull the value automatically when adding a record. Because QWRS232 integration is included with the platform, RS-232 data capture requires no third-party tools or custom scripts.

**Remembering the Last Value** – Assigning the same file path to both an Input File and an Output File allows a variable to “remember” its last value. The Input File loads the previous value before the Add screen appears, and the Output File stores the new value after Save. This is helpful for fields such as Batch Number, Lot, or Operator when the last value is commonly reused.

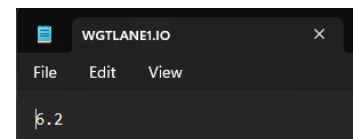
Input File	TEAM.IO
Output File	TEAM.IO

*Example of Remembering Value Configuration*

**Supported Input Sources** – QW supports a range of data sources including RS-232, DDE, OPC, QW DataHub, and basic I/O files. Administrators can start with simple file-based inputs and expand to real-time automation using [QW DataHub](#) or OPC Servers.



*Example Input/Output property Dialogue*



**Automation Tools** – QWAdd.exe performs automated record creation by applying Input Files first (to build the record in memory), then writing the record, and finally updating Output Files after save. QWAdd.exe does not evaluate sampling plans but fully honors Input and Output definitions.

**When to Use Input Files** – Use Input Files when a measurement already exists in an external system and should be imported automatically during Add, or when you want to provide a default value that is pre-filled for the user.

**When to Use Output Files** – Use Output Files when downstream tools or other QW variables need to read the most recent value after QW saves the record.

**When to Use Both** – Use Input + Output together when a variable must retain its last used value while still allowing operators to update it.

## Learn More

### Video Tutorials:

- [Input/Output Files in Quality Window: Enhancing Data Connectivity](#)
- [Using the Add Data Screen](#)
- [RS232 Real-Time Data Collection with Quality Window SPC](#)

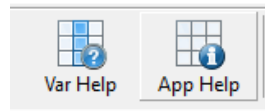
### PDF Guides:

- [Automating Data Collection in QW](#)
- [QW RS232 Admin Guide](#)

## Step 7. Adding Help Files and Reference Material

Each variable in Quality Window can have a linked Help file that provides reference information, diagrams, or best-practice instructions. Help content appears when operators click the Var Help icon while entering data.

Use variable-level Help files to include setup instructions, photos of acceptable product conditions, or troubleshooting steps for alarms. A well-maintained Help system supports operator training and ensures consistent reactions to process deviations.



*Example of Help buttons in QW Workstation*

Help content is not limited to variables. Each application can also include its own QW Application Help link, providing broader guidance or documentation specific to that process. The application-level Help entry can reference a file path, a web address, or a document link. Examples include a local or shared Word document, a PDF file containing standard operating procedures, or an internal intranet page describing product-specific instructions.

Keeping both variable-level and application-level Help current allows users to quickly access the right information without leaving Quality Window.

## Step 8. Reviewing Your QW Application General Settings

Once variables, limits, sampling plans, and input/output files are configured, it is helpful to review the application's General Settings. These settings provide additional control over how the application behaves in QW Workstation and expose more advanced features that administrators may wish to enable over time.

**Application Information** – These fields show the application filename, version, and other identifying details. Filename and version are informational only. The version automatically updates whenever changes are saved in QW Admin.

**Application Help File** – Assign a help document for this specific application. This can be a PDF, Word document, URL, or any reference file operators may need. The help file is accessed in QW Workstation through the App Help button.

**Number of Variables to Lock** – This behaves like the freeze-pane feature in Excel. It locks the specified number of left-most variables so operators can scroll horizontally while keeping key identifiers visible.

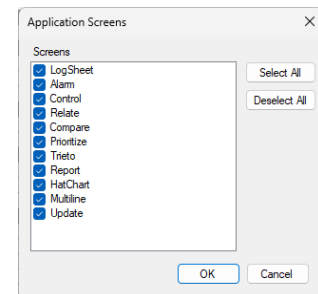
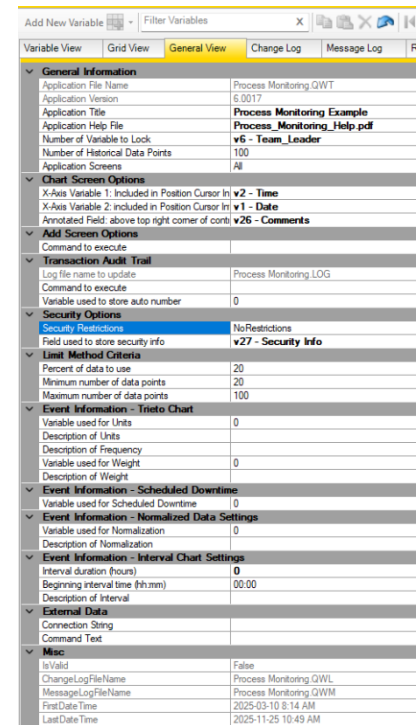
**Application Screens** – Administrators can choose which screens (Logsheet, Alarm, Control, Relate, Compare, Prioritize, Trieto, Report, HatChart, Multiline, Update) are available to operators. Disabling a screen hides its tab in QW Workstation. There is no functional risk in disabling screens; it simply simplifies the user interface. Users can manually override this through Views, but it is not obvious.

**Chart Screen Options** – Define optional chart enhancements such as which variables appear in the position cursor information box and which variable is shown as the annotated field. The annotated field displays the value of the selected variable above the chart, helping operators understand context while reviewing trends.

**Add Screen Options** – Administrators may specify a command to execute when a user clicks Add. This is primarily used to launch QWRS232.exe for RS-232 device integrations. Modern Add workflows are better handled using scripting, but RS-232 integrations still rely on this executable. For more details on [RS-232 Guide](#).

**Transaction Audit Trail** – Audit logging is automatic in QW6 and records all Add, Edit, Copy, Insert, and Delete actions. These settings are informational. The audit log uses the same base name as the application file with a .LOG extension and is stored in the same folder as the .QWT file. The audit trail viewer shows historical changes, metadata, and the full change history for each record, as described in [the Transaction Audit Trail Guide](#).

**Security Options** – Administrators can enforce granular security for the application using Read, Add, Edit, Insert, Copy, Delete, and Views permissions. These restrictions apply only when QW



Security is enabled. Access is granted based on the user authenticated through QW Security; if security is not configured, the field displays the Windows username but does not restrict access. Learn more about our security features in our [Implementing Security in Quality Window Guide](#).

**Limit Method Criteria** – These settings apply only when using Calculated limits. The defaults (20% of data, minimum 20 samples, maximum 100 samples) are recommended for most applications. Advanced users may adjust these values to fine-tune how calculated limits are generated. See our [Setting Limits in QW Guide](#) for more details on how these settings affect how Limits are calculated.

**Event Information** – These fields apply only to event-based applications such as downtime/defect/scrap analysis, interval charting, or Trieto-style event monitoring. Process or quality applications can safely ignore these settings.

**External Data** – Quality Window supports building read-only applications that pull data directly from an external database. These settings define the connection string and command text used to retrieve external data. Applications using this mode do not support adding new records in QW Workstation. See the [SQL Wizard documentation](#) for more details.

**Auto Numbering** – Administrators may assign an auto-number variable to automatically generate sequential values such as record IDs or form numbers. The number is updated each time a record is saved. See the [Auto Numbering Guide](#) for full details.

**Miscellaneous Fields** – First and last date/time values represent the oldest and newest records in the dataset. Other fields in this section are informational only.

## Step 9. Validation and Testing

After building your application, perform controlled tests before releasing it to production. Development, review, and testing should involve key users of the application so their feedback can be incorporated early.

- ✓ Add several test records and verify that colors, alarms, and statistics respond as expected.
- ✓ Review Control Charts and Alarm screens for clarity.
- ✓ Check that calculated variables and formulas produce correct results.
- ✓ Confirm that input and output files operate properly.

Adjust limits, rules, or variable settings based on feedback before deploying the application for live use.

## Step 10. Documentation and Maintenance

Application documentation and maintenance are ongoing responsibilities that keep Quality Window accurate, useful, and trusted by operators. The goal is not just to record configuration details but to ensure the application evolves as processes, products, and knowledge change.

## Documentation

Each application should have a short record of its structure and intent. This record helps new administrators and auditors understand what the application measures and why.

Recommended items to document include:

- Variable definitions and their purpose.
- Formulas and calculation methods.
- Sampling plan and frequency.
- Limit and rule settings.
- Input and Output file configurations.
- Any Help file or document links used for the application or its variables.

Every time an administrator saves a change to an application, Quality Window saves an audit log of the changes and automatically creates a full copy of the previous version in the QWArchive subfolder where the application is stored. This provides a complete history of changes without requiring manual backups.

The optional Message Log field in the application properties can be used to communicate important changes to users, such as new limits, updated sampling rates, or added variables. It is a good habit to record a short note each time an application is modified so operators know what has changed.

## Maintenance

Regular maintenance ensures that applications remain relevant and that data entry stays accurate and efficient.

**Review popup variables** that use the key 99 feature, which allows users to enter custom text when a suitable option is not found. These entries can reveal missing categories or new conditions. Administrators should periodically check these 99 entries and update the popup list to include valid new options.

**Archive or remove older data** that is no longer relevant to daily analysis. Keeping active files lean improves performance and focuses users on current conditions.

**Review Help links** for both variables and the application regularly. As processes evolve, add or update Help content to reflect new best practices or lessons learned.

**If recurring problems** are identified, consider adding new variables to capture more detail or to make future analysis easier.

**Review sampling rates periodically.** If data remains consistently good and rarely changes, you may be sampling more often than necessary. If results show higher variation or frequent out-of-spec conditions, sampling frequency should be increased until the process stabilizes.

## SPC and SQC Maintenance Practices

Several key SPC practices apply directly to maintaining a single Quality Window application.

**Validate limits and rule sets** regularly to confirm they still reflect the natural behavior of the process or product being measured. If improvements or equipment changes occur, existing control limits may no longer be meaningful and should be recalculated using current data.

**Run occasional capability checks** using Quality Window's statistics or reports. Compare capability values over time to ensure the process continues to meet requirements and to quantify improvement.

**Review the Alarm reports periodically** to assess rule effectiveness. If alarms occur too frequently or rarely generate action, adjust rules or limits so they provide useful feedback instead of noise.

Check data integrity for any variables using Input or Output files. Look for missing, repeated, or frozen values that could indicate device or automation issues. Correcting these early prevents inaccurate trends and wasted analysis effort.

Ongoing maintenance is what keeps Quality Window aligned with how your process actually operates. Treat it as part of your continuous improvement routine rather than a one-time setup task.

## Summary

A well-designed Quality Window application provides accurate, consistent, and meaningful feedback on process performance. By applying thoughtful variable design, realistic limits, clear rules, and disciplined sampling, administrators can build applications that help teams detect problems early and maintain control of quality and production performance.

Once you are comfortable building applications, continue to explore advanced tools such as automation with macros, shared reporting, and scripting for customized behavior. These topics are covered in the deeper administration and SDK-level documentation.