

# VTScada<sup>®</sup>

by Trihedral

## THE ONE SOLUTION FOR ALL YOUR SCADA CHALLENGES

**ONE PLATFORM** This unified SCADA toolset is far more reliable than hand-coded third-party add-ons.

**ONE INSTALL** Pre-integrated components vastly reduce development time and make upgrades easy.

**ONE FAILOVER & BACKUP PLAN** Only VTScada supports unlimited server failover and sync. No coding required.

**ONE UPGRADE PATH** Seamlessly grow systems to any size. We never retire versions forcing you to start over.

**ONE SUPPORT TEAM** No chasing down help for third-party pieces. Our in-house team has your back.

SEE WHY **BUILT-IN** IS BETTER

**VTScada.com**



WATER & WASTEWATER | OIL & GAS | MANUFACTURING | BROADCASTING | MARINE  
POWER GENERATION & DISTRIBUTION | AGRICULTURE | BUILDING AUTOMATION  
PHARMACEUTICALS | AEROSPACE | DATA CENTERS | FOOD & BEVERAGE | MINING  
AQUACULTURE | BRIDGE & LOCK CONTROLS | EMERGENCY RESPONDER ALERTING

# VTScada®

## Trusted by **Critical Systems** of every Size

From compact single-site systems to sprawling, multi-million tag enterprise deployments, no other software makes it easier to develop, deploy, and scale applications with ease and confidence. Unlike other software products, all core SCADA features are developed and maintained in-house.

- This eliminates the need to license and manage third-party products
- No fragile custom code needed for standard SCADA components
- All features upgrade seamlessly with every version; no retired versions

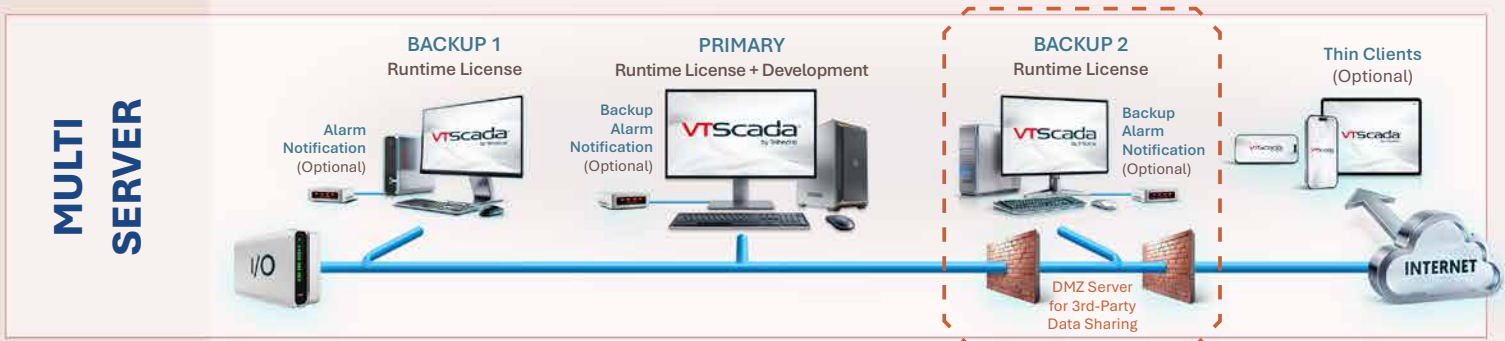
**VTScada's unified design** reduces integration time and allows systems to scale effortlessly



### The perfect platform for small utilities & industrial users

Just a single install includes everything required for a fully-featured SCADA system.

- A single license includes operator workstation, full Historian, and 100+ device driver library
- Easily add tags and enable optional features (app development, alarm notifications, thin clients) by updating installation key
- Pre-configured Alarms, Trending, Reports, Mapping, Operator Notes, navigation, etc., reduces development time



### When reliability matters add any number of backup servers in seconds

No platform handles hot-backup failover and automatic data synchronization better. No fragile custom code required.

- Distribute servers across multiple locations via LAN or WAN
- Automatically sync Historian, Alarm/Events DBs, change log, accounts, etc.
- Each redundant server requires its own VTScada license
- Discounted license bundles and simple setup makes redundancy affordable to systems of any size

# TRULY RELIABLE SCADA SOFTWARE

## DISTRIBUTED ENTERPRISE

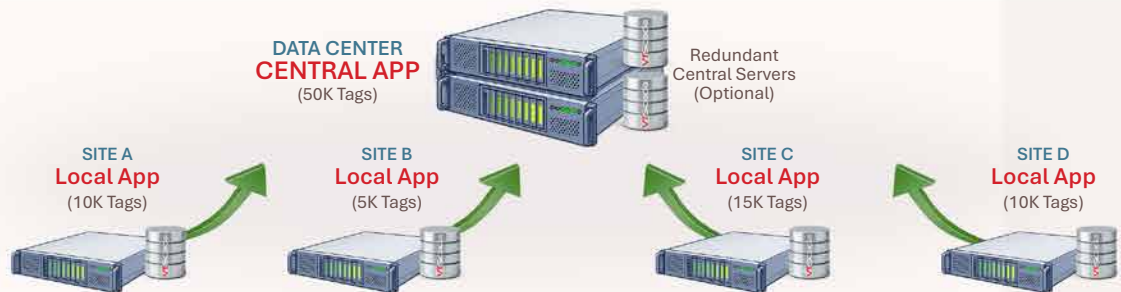


### Flexible architecture for large distributed systems

Mix-and-match single and bundled licenses to create robust solutions that tie together diverse assets and locations.

- Design your own architecture or use sample settings for common configurations
- Provide distributed backups for all critical services like Alarm Notifications and Thin Client servers
- Easily share historical data with a wide variety of third-party business platforms
- Each site provides its own local monitoring/logging if connection is lost

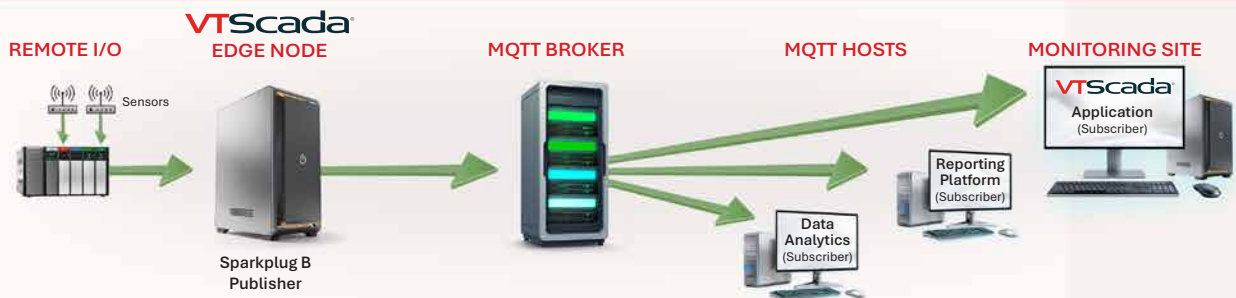
## MULTISITE ROLLUP



### Multisite monitoring with centralized backup

- **Central Applications** with large tag counts sync with small local applications. Local servers can provide redundancy for other sites. Configuration, security, and monitoring for all facilities from central application
- **Master Applications** access screens, real time data, and history from Subordinate Apps. Set up in seconds. Tags in Sub Apps not counted twice. Configuration managed on each remote server

## EDGE SCADA



### Share data on a massive scale using IIoT, MQTT, and Sparkplug B Publisher

Employ VTScada as a powerful edge node that publishes to MQTT Brokers where MQTT subscribers can access them.

- Share data between IoT apps including other VTScada apps
- Delivery initiated by Edge of Network Devices (i.e., Report by Exception)
- VTScada apps can emulate multiple devices and include multiple publishers

## BUILT-IN DATA LOGGING

### The VTScada Historian *STANDARD*

This powerful Historian is part of every application. Tags receiving data begin logging automatically.

**BUILT FOR SPEED** - Log up to 360,000 values/sec (via SDD) and sync across a WAN at over 550K values/sec.

**PROTECTING HISTORICAL DATA** - Distribute multiple synchronized historians at multiple sites.

**THIRD-PARTY DATABASE SUPPORT** - Optionally supports other database formats (sold separately). Requires VTScada licenses with Development or Third-Party Data Sharing.

**EFFICIENT LOGGING** - Log on time of day or changes in value. Use deadbands and delays to save disk space and bandwidth.

**HISTORY IMPORT** - Replace your SCADA. Keep your history.

## NATIVE I/O POLLING

### Polling & Comm Link Sequencer Tags

#### *TAGS NOT COUNTED TOWARDS LICENSE LIMIT*

Integrated Comm Link Sequencer Tag (IP Radios) and Polling Tag (Serial Radios) automatically manage poll sequencing and radio resources, eliminating the need for a master PLC device, which reduces integration costs, and points of failure.

- Use fewer radios by transmitting multiple protocols on a single comm link
- Configure any number of polling groups
- Select 'Fast Polling' rate for specific RTUs
- Poll by external triggers, on schedule, or on command
- Display min, max, and average values

## NON-PROPRIETARY CONNECTIVITY

### Device Driver Library

#### *STANDARD*

**NEW IN 12.2 - FBx Series DNP3 Driver for Emerson FloBoss Flow Computers (right)**

#### CONNECT ANY COMBINATION OF HARDWARE

Includes 100+ standard and proprietary I/O protocols, each with built-in comms alarms. Use OPC by choice, not necessity. We can also create drivers to meet your needs.

**COMMON PROTOCOLS** - OPC UA & DA, DNP3, IEC, DF1, DDE, SNMP, Modbus (Serial, TCP/IP, RTU)

**DATA LOGGER PROTOCOLS** - Enron Modbus, Stevens, Campbell Scientific Pakbus

**PROPRIETARY PROTOCOLS** - Delta, Motorola, GE, Siemens, BSAP, Omron, DFS, Dexter Fortson, Allen-Bradly CIP, and more

**RADIO DIAGNOSTICS** - MDS, DataRadios\*

**IIoT, MQTT, and JSON DRIVERS** - SparkPlug B driver auto generates tags using information from end devices

**SHARED DRIVER LISTS** - For improved efficiency. Can be shared with any driver



# BUILD SCADA INTELLIGENCE



## FIX BAD VALUES - ENTER MANUAL DATA

### Historical Data Editing

#### *STANDARD*

Authorized users can override faulty values or add missing ones.

- Edit individual or ranges of values
- Overwritten values are not lost
- Edits require an explanatory note
- Edited values marked in Historical Data Viewer

## MAXIMIZE MODEM EFFICIENCY

### Modem Management

#### *USED WITH ALARM NOTIFICATION SYSTEM*

Pool modems across servers for improved efficiency.

- Includes a custom Unimodem driver
- Supports logging of modem activities
- Configure dedicated modems for functional areas
- Data & alarm notification routed to appropriate voice/data modem(s) or email servers. No configuration necessary
- Supports logging of modem activities
- Display modem events, usage stats, and status

# PUT YOUR DATA TO WORK ACROSS YOUR BUSINESS

## EASY OPERATOR TRENDING

### Historical Data Viewer (HDV) *STANDARD*

Operators have the power to create and save their own custom trend groups without needing to call a developer. Part of every application, the HDV Page combines historical and real-time data into a continuous picture of any number of I/O values.

#### OPERATORS CAN EASILY...

- Plot analog & digital values simultaneously
- Add unlimited pens representing I/O values
- Adjust each pen and save as a group
- Add encrypted notes to atypical readings
- Export any range of data to a file or database
- Select overlapping, stacked, or tabular views



## OUT-OF-THE-BOX REPORTING

### Report Page & Report Tag

#### *STANDARD*

**AD-HOC REPORTS** - Reports Page easily generates reports on the fly.

**SCHEDULED REPORTS** - Time-zone aware Report Tag can be triggered on schedule or event.

**PRE-DEFINED REPORTS** - Includes a suite of standard water/wastewater reports. Alarm Page includes reports for managing nuisance alarms.

**DISPLAY OPTIONS** - Output to a screen, email spreadsheet, or database. Add custom script reports and Excel® templates as needed.

## A MODERN LOOK AND FEEL

### Refreshed Trend Calendar

**New in 12.2** - Easily navigate to distant dates by clicking the month & year at the top. Click once to jump to a month, twice to jump to a year. Arrows flip the calendar in single-month increments.

## WORK DIRECTLY WITH DATA

### Microsoft Excel Plugin

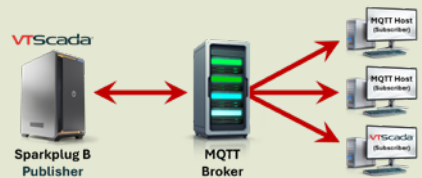
#### *REQUIRES DEVELOPMENT & EXCEL® LICENSE*

Work with historical data outside of VTScada.

- Download Excel Plug-in from Microsoft Store
- Choose VTScada Historian as the data source
- Select I/O tags and build queries

## SHARE DATA ON A MASSIVE SCALE Enterprise Connectivity

*REQUIRES DEVELOPMENT OR 3RD-PARTY DATA*



## VTScada - A POWERFUL EDGE NODE SPARKPLUG B PUBLISHER

**New in 12.2** - Use the new Edge Node Tag to publish to MQTT Brokers. When paired with an Edge Device Tag, it supports a Sparkplug B-compliant MQTT network right from your app.

- Share IoT apps including other VTScada apps
- Delivery initiated by Edge of Network Devices (i.e. Report by Exception)
- VTScada apps can emulate multiple devices and include multiple publishers

**NEW - PUBLISHER LIST TAG** - Configure I/O tags to publish up to 8 publisher tags.

**NEW - I/O TAG PUBLISHER SELECTOR** - Set to allow tags that publish data to auto link to ancestor, uncle, and sibling publisher tags.

## MORE CONNECTIVITY OPTIONS

**OPC SERVER** - Allows OPC-compliant programs (including other VTScada apps) to exchange live data with VTScada applications.

**OPC CLIENT** - Allows VTScada to exchange live data with an OPC-compliant server (including VTScada apps with OPC servers).

**ODBC SERVER** - Share with products like XLReporter®, Dream Report®, Crystal Reports®, Access®, or Excel®. Each logged VTScada tag represents a table of timestamps and values that report tools can query.

**REST & WEB SERVICES** - REST & SOAP (XML) interfaces allow business systems to request real-time and historical data. Supports time/date ranges, min, max, time of min, time of max, average, total, and SQL that include SELECT commands and WHERE clauses.

**THIRD-PARTY REPORTING** - Products like e.RIS®, XLReporter® and Dream Report® have integrated VTScada interfaces.

## FASTER THIRD-PARTY PERFORMANCE

**SQL VIEW TAGS** - Add relevant tags and meta data to virtual tables that third-party platforms can query faster than the entire Historian.

## Graphic Display Pages STANDARD

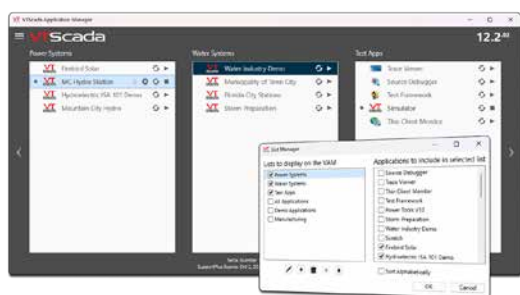
- Open pages in full screen or windowed
- 24-bit / 32-bit ‘true color’ support
- Dual/quad monitor support
- Supports consistent display on all screen resolutions

## Simple Page Navigation STANDARD

## NO MORE PAPER LOGBOOKS

## Encrypted Operator Notes STANDARD

**ACCESSIBLE** - Authorized users can access notes from any workstation or web client. Search by date. Print any range.



## MANAGE MULTIPLE APPLICATIONS

## VTScada Application Manager (VAM)

From the VAM, authorized users can start & stop applications, create new ones, join multi-server systems, clone apps using ChangeSet files, and configure Thin Clients. When running as a Service (e.g., in the cloud), the VAM is accessible via Thin Clients (Windows only).

- Choose default color themes
- Choose default languages
- Create lists to sort multiple apps

SERVE GLOBAL SCADA MARKETS

## Multi-Language Support STANDARD

- Users can set a preferred language or change on the fly
- Add new text phrases all at once or as needed

# EMPOWER

## OPERATORS



## THE PERFECT TOOL TO CAPTURE MANUAL DATA

## Data Entry Forms - *NEW IN 12.2*

New collection of Widgets allow you to create custom forms for entering manually collected data, like lab results or inventory counts, into the VTScada Historian.

- Values not submitted until the user submits the completed form
- Time offset options let users record time-stamped data after the fact

[illegible]

## PUT YOUR SYSTEM ON THE MAP

### VTScada Slippy Maps STANDARD

Navigate sites with a click, toss, or scroll, the same way you use online tools like Google Maps\*. Embed maps into custom pages or use the standard Map Page.

**CLICK PINS TO OPEN SITES** - Pin color based on polling status. Drag into place or use Lat & Long.

**BULK DOWNLOADER** - Import all tiles for specific areas and elevations for use when offline.

**LIMIT AREAS & ZOOM LEVEL** - Ensure users stay focused on their operational areas.

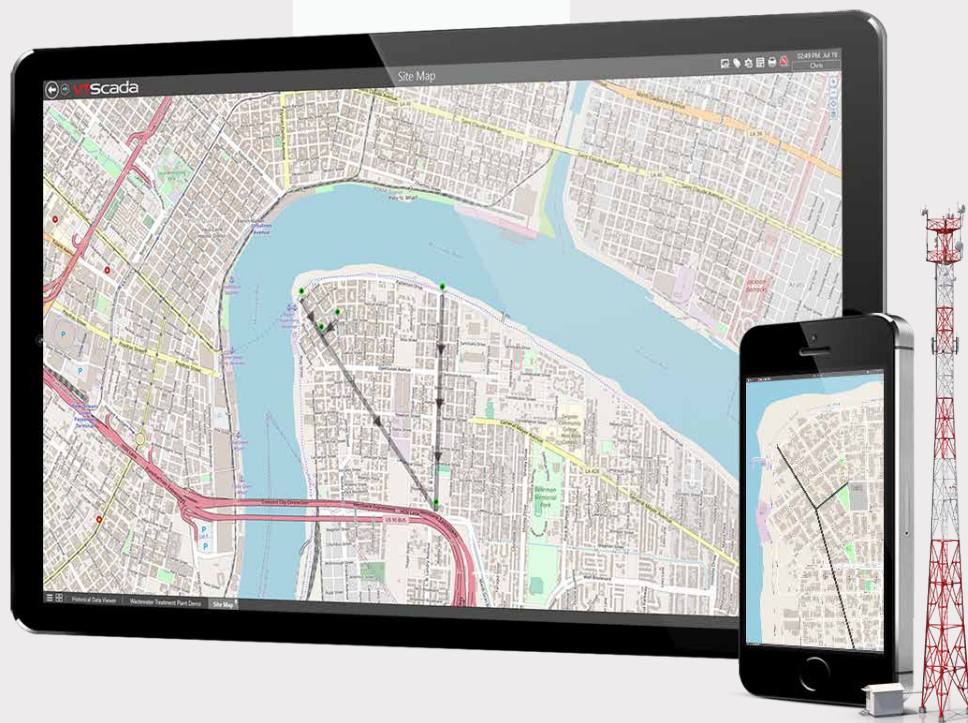
**MOBILE MAPPING** - Native Thin Client support.

**MAP TILES** - Online systems pull tiles from CARTO\* and OpenStreetMap\*. Pre-load tiles for offline apps or load custom tiles.

**TILE OPTIONS** - Switch between high contrast, high performance, or night view styles.

**SITE CONNECTORS** - Add pipes, power lines, or structures that change look based on system values.

\* Third-party tiles may be subject to terms or user agreements, compliance with which is the user's responsibility.



## A SEAMLESS OUT-OF-THE-BOX MANUFACTURING WORKFLOW

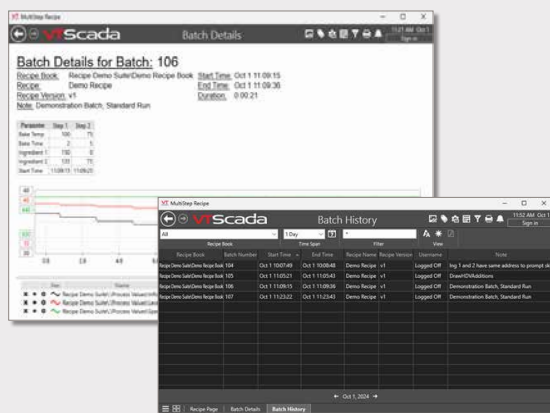
### Enhanced Batch & Recipe Management

STANDARD

Create any number of Ingredients, Recipes, and Recipe Books. All recipe changes are permanently recorded across all servers. Authorized users can scale or modify batches to create revisions. Automatically trigger multiple Recipes in series. Easily import and export recipes as spreadsheets. Utilities can even use batches to change modes to prepare for adverse weather.

### Multi-Step Recipes, Enhanced Batch Details, and New Batch History Page - *New in 12.2*

- Run complex multi-step recipes
- Batch Details Page displays info for each batch with configurable HDV
- Filterable Batch History Page provides historical batch info
- Externally start batches from existing UI while managing the process with VTScada

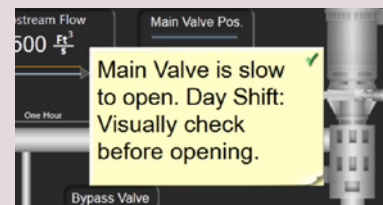


## BUILD TEAM COMMUNICATION

### Temporary Sticky Notes

STANDARD

Temporary messages and reminders that co-workers can stick on any or all pages.



- Easy to create, format, and edit
- Cover control elements to discourage use
- Hide/show all notes with one click
- Add an acknowledgment checkbox (recorded in Event history)

## TOUCHSCREEN FEATURES

STANDARD

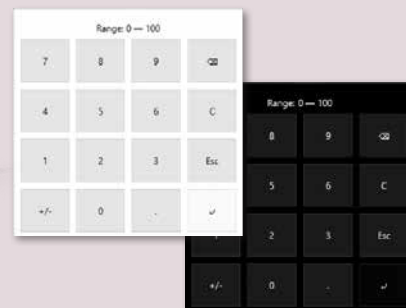
### On-Screen Keyboard

VTScada's seamless support for the native Windows® onscreen keyboard allows you to easily switch between keyboard layouts and set default keyboards on a per device basis.

### Numeric On-Screen Keyboard

*New in 12.2* - Once enabled, replaces the standard on-screen keyboard for numeric entry fields on touchscreens and desktops.

- Display valid input ranges
- Block out-of-range values
- Day and night modes



## JUST-IN-TIME OPERATOR RESOURCES

STANDARD

### Embedded Video

This drag-&-drop Widget streams live camera feeds from display pages to help operators visually verify what their HMI is telling them. Supports MJPEG streams over HTTP.

### Embedded Browsers

Add supplementary resources like weather maps, YouTube® training videos, online Help files, or Thin Clients from other VTScada applications.

## BUILT-IN ALARM & EVENT MANAGEMENT

### The VTScada Alarm Page

#### STANDARD

Every application includes pre-configured databases that support unlimited alarms and events. In the event of an alarm, click the flashing icon at the top of every page to open the standard VTScada Alarm Page where you can see current, active, unacknowledged, disabled, and shelved alarms.

- See time-stamped events (e.g., logons, setpoint changes)
- Sort by date/time and filter by functional area or priority
- Acknowledge, silence, or mute alarms while configuring
- Embed customized alarm lists into display pages
- Print any range of the alarm or event history

## IMPROVE SITUATIONAL AWARENESS

### ISA 18.2 Alarm Tools

#### STANDARD

Pre-integrated utilities let you enact the best practices outlined in the ISA 18.2 Alarm Management Standard. Alarm Lists combine text, symbols, color, and sound to instantly convey alarm status and priority for each alarm.

- Easily plot an alarm's tag data or open related displays
- Add encrypted operator notes to alarms
- Shelf alarms to pause alerts during maintenance

Built-in reports help you perform Alarm audits.

- **Bad Actors** – Eliminate nuisance alarms
- **Alarm Flood** – Track down the root cause
- **Alarm History** – Investigate Active and Trip alarms
- **Priority Distribution** – Focus on what is most critical

## Multi-plant Architecture

Configure Alarm Database Tags for multiple functional areas. Filter Alarm Page on any networked workstation. Local databases allow operators to manage alarms when disconnected from alarm servers. Sync databases across sites to keep alarm and event history safe and up-to-date.



# ADVANCED SITUATIONAL AWARENESS

Daytime and  
nighttime views  
reduce eyestrain.



**REFRESHED ALARM CALENDAR - NEW IN 12.2** - Easily navigate to distant dates by clicking the month and year. Click once to jump to a month, twice to jump to a year. Arrows flip in single-month increments.



## CRITICAL ALARMS FIND YOU ANYWHERE

### Alarm Notification System OPTIONAL

This native component requires no custom code and remains tightly integrated for the life of your system. View and acknowledge alarms via SMS text message, email, and text-to-voice phone call. Log on by phone to check levels, manage alarms, change setpoints, or control equipment.

**VoIP ALARM ANNUNCIATION, NO MODEM OR INTERNET** - In addition to physical voice modems, VTScada supports Voice Over Internet Protocol (VoIP).

1. **Online Systems** - Twilio® is a third-party web platform (licensed separately)
2. **Offline Systems** - Analog Telephone Adapters (ATA) or VoIP phone systems

**REDUNDANCY** - Use VoIP, Twilio, and voice modems as redundant voice call backups. VoIP now allows encrypted call setup and encrypted audio.

**ROSTERS** - Lists of up to 39 users to contact in sequence until an alarm is acknowledged. Create any number of Rosters for applications or functional areas. Change Rosters by events or on schedule.

- Set custom wait times or notify multiple contacts in one "burst"
- Repeat one or more contacts without adding them multiple times
- Allow users to configure Rosters without the ability to modify all tags

### **FASTER HANDS-FREE ACCESS - TWILIO® ACCEPTS SPOKEN ALTERNATE ID - NEW IN 12.2**

Alternate IDs are numeric codes users can dial, to log in when responding to alarm notifications by phone. Now Twilio users can simply speak it out loud.

## BUILT-IN IMAGES & DATA-DRIVEN WIDGETS

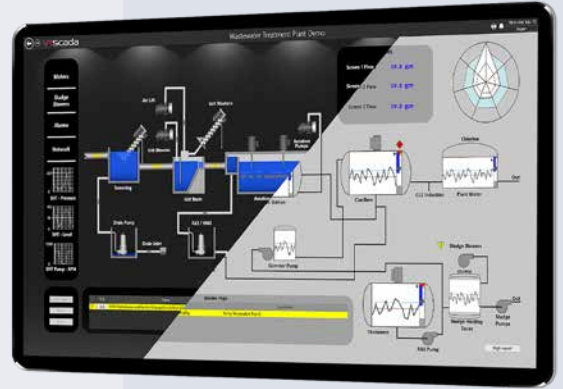
# Choose Your Screen Design Philosophy

### STANDARD

VTScada helps Operators effectively manage ever-growing systems by supporting the design philosophy that best suits your process.

**HIGH-RESOLUTION** - Hundreds of built-in drag-and-drop images, symbols, shapes, and widgets allow developers to rapidly create vibrant visual depictions of your process.

**HIGH-PERFORMANCE** - Easily enact ISA 101 principles to help operators better manage complex systems. Create uncluttered grayscale pages punctuated by high performance widgets (sparklines, analog indicator bars, spider graphs) that use context data, color, and sound to clearly identify emerging issues.



## SECURE ACCESS FROM ANYWHERE

# VTScada Thin Clients OPTIONAL

Manage your process from wherever you need to be. Authorized users can monitor and control their systems using mobile devices or computers.

- **SIMPLE PRICING** - Licensed by concurrent users. Individual and bundled pricing available
- **INDUSTRY-STANDARD ENCRYPTION** - Supports Transport Layer Security (TLS)
- **APPLICATION CONFIGURATION** - Authorized users can edit tags and system settings
- **MULTI-MONITOR SUPPORT** - Allow Thin Client users to work more efficiently (VIC Only)

## Simple Thin Client Configuration

Set up this native component in seconds.

- No need to rebuild displays
- No need to download apps
- No need to pay for and install third-party products like Apache® or Microsoft IIS®
- **No custom code required**

Requires licenses with Thin Clients added. Clients shared across multi-server systems.

## Easily switch between these three display options.



### VTScada ANYWHERE CLIENT

SMARTPHONES, TABLETS, PCs, MACs, LINUX

A full operator workstation experience from any device with an HTML5 browser.

- 'Push' technology uses less data
- Nothing to install
- No Java required



### VTScada INTERNET CLIENT (VIC)

WINDOWS PCs & LAPTOPS

Operator workstation with optional configuration. A flexible alternative to installed licences.

- Configuration requires a Development license
- Access the VAM (P. 6) to manage applications in the cloud or running as a service
- Launch VIC from a desktop icon or web link

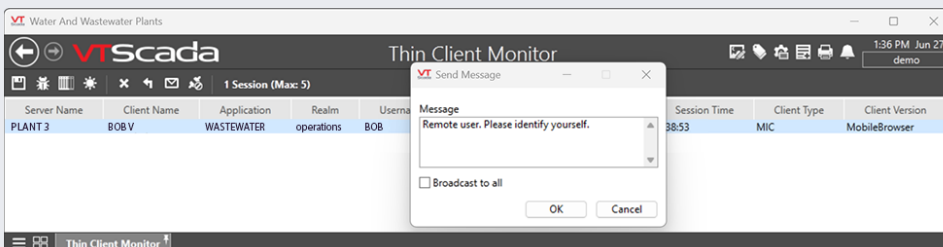


### MOBILE INTERNET CLIENT (MIC)

SMARTPHONES, TABLETS, PCs, MACs, LINUX

A simple tag-and-trend HTML5 interface perfect for small screens and big fingers.

- Easily scan tag values for each page
- Tap to trend multiple tags
- Change setpoints, manage alarms



## TRACK WHO IS CONNECTED

# Thin Clients Monitor

### STANDARD

The **Thin Client Monitor** page logs and displays Client activity. Message or disconnect users. Logs user IP, computer name, screens viewed, session length, and control actions.

## FAIR TAG LICENSING

### Only Pay for Tags You Need

Unlike products that push you to pay too much for "unlimited" packages, VTScada ensures you only pay for what you use. Easily add tags as needed. Also, while VTScada uses tags to manage things like I/O, calculations, alarms, and menus, **only I/O tags count towards your tag count.**

## MANAGE TAGS WITH EASE

### VTScada Tag Browser STANDARD

Create, edit, search, filter, export/import tags from one intuitive interface. Select multiple tags for group editing. Rename and reorganize tags without losing history, alarms, or page references.

**NEW IN 12.2 - OPENS UP TO 50X FASTER** - Even for massive systems. Site list page performance also enhanced.

**A MINI HMI** - Control Dialogs and live data transform the Tag Browser into a mini HMI without a single Widget. Right-click tags to plot data or jump to pages referencing that value. Manual tag values let you test your system without live I/O.

**FILTER TAGS FOR EASY COMMISSIONING** - Set Tag Quality field for new I/O as "Questionable". Then, filter on this field to ensure they are all confirmed during commissioning.

## WORK FASTER AND SMARTER

### Rapid Tag Development

**MODEL REAL-WORLD OBJECTS** - Create reusable structures of nested parent & child tags to model complex infrastructure (a plant with multiple motors, each with I/O & comms drivers).

**CLONE SUBSYSTEMS** - Simply copy a parent tag and edit as needed. Copied tags automatically reference new scope.

**CREATE SETS OF REUSABLE ASSETS** - Combine parent tags with graphics to create custom Widgets & Page Templates.

#### USE BUILT-IN PAGE TEMPLATES FOR SELECT RTUS:

- GRUNDFOSS PUMP CONTROLLER\*
- MPE PUMP CONTROLLER\* TEMPLATES
- XYLEM MULTISMART STATION\* - Up to 9 pumps in 2 wells



Templates include Alarms, analog & digital inputs, digital controls, analog setpoints, counters & runtime totalizers, data age, comm link status, latitude/longitude (with Slippery Maps support), summary starts/stops.

**INTEGRATED ALARMS & LOGGING** - For select analog & digital tag types. Pump Status Tags include high & low alarms.

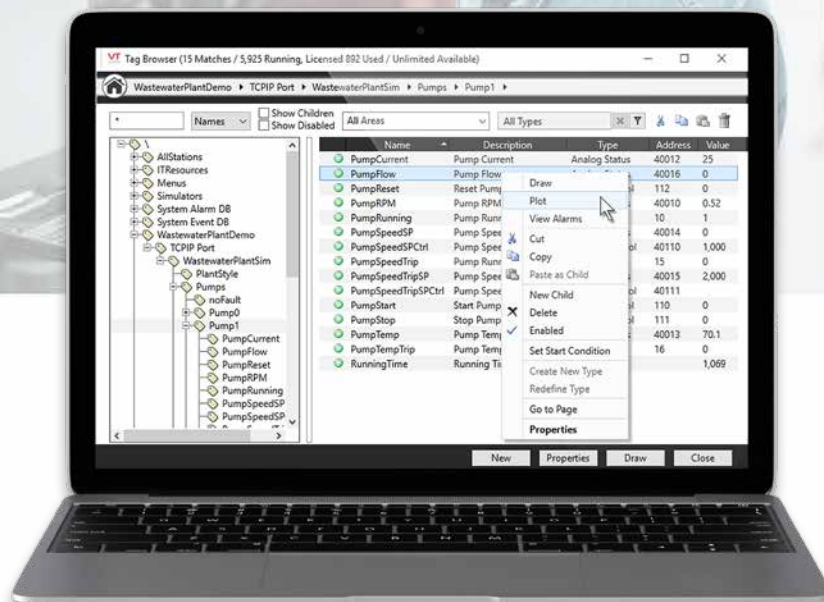
**MULTI-WRITE TAG** - Writes up to 50 outputs at once. Useful for starting HMIs or replacing PLCs.

**RATE-OF-CHANGE TAG** - Detect rapid value changes (a leak) or lack of changes (a failed pump).

**TRIGGER TAG** - Initiate actions on time or change.

**HISTORY STATISTICS TAG** - Displays calculated values.

# HIGH-EFFICIENCY APPLICATION DEVELOPMENT



**CONVERT LEGACY TAG DATABASES** - Save time by converting tags from your old SCADA software. Use the Help files to learn to do it yourself or let us do it for you at no charge!

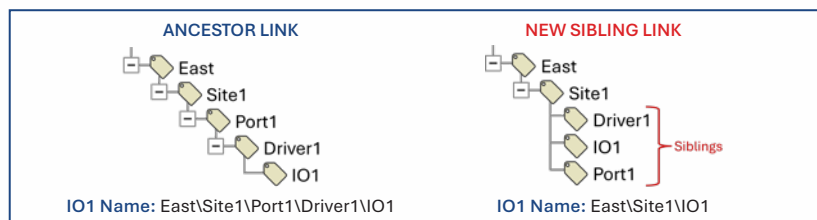
**IMPORT PLC TAGS** - Add all or selected tags from Allen-Bradley PLCs and OPC UA/DA servers.

**MASS UPDATE TAGS IN EXCEL** - Easily export application tags so you can rapidly create and edit them using familiar tools like Excel. Then, simply import new and updated tags.

**I/O & CALCULATION TAG** - This universal tag type replaces multiple older types. It includes tag parameters that add context for auto-generated pages and high-performance widgets. Change the tag type later without losing its history.

#### NEW IN 12.2

**AUTO LINKING TO SIBLING TAGS, A BETTER WAY TO ORGANIZE TAGS** - Tags that auto link to ancestors can now also link to uncle and sibling tags. This creates flatter hierarchies and shorter tag names that are easier to troubleshoot and fit better in selectors and reports.



**AUTO LINKING HISTORIAN TAGS** - The VTScada Historian can now also auto link to ancestor, uncle, or sibling historian tags using [\*Historian].

**EXPORT ONLY A TAG SUBTREE** - Save time when exporting tags for editing in Excel, by only exporting a selected tag and its child tags.

**ADDRESS ASSIST FOR WORKSTATION STATUS DRIVER** - When linking a Workstation tag to an analog I/O & Calc Tag, an address assist menu appears with options for workstation status monitoring.

**EASILY VIEW & COPY TAG NAMES & UNIQUE IDS** - A new pop-up in the Tag Properties Dialog opens to display the full Tag Name and Unique ID. Use quick copy buttons to add to clipboard.

# INSTANTLY INTUITIVE DRAG & DROP SCREEN DEVELOPMENT

CREATE GREAT LOOKING SCREENS WITH EASE

## The VTScada Idea Studio LICENSES WITH DEVELOPMENT

This intuitive design environment makes it easy for anyone to start creating outstanding displays using a huge library of built-in drag-and-drop elements that are easily selected and aligned. Zoom in to tweak the finest details. No more messy screens and custom API calls to third-party platforms.



### FAMILIAR RIBBON INTERFACE

Context-sensitive toolbar provides instant access to the tools you need. Easily search hundreds of Widgets and graphic objects.

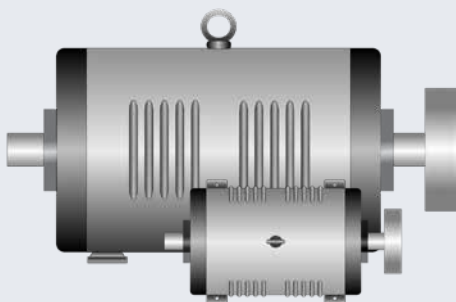
**BUILD ONCE, VIEW ANYWHERE** - Design for multiple monitor resolutions (full screen or pop-up). No need to redesign screens for mobile devices.

**IDEA STUDIO ON THIN CLIENTS** - Configure screens from PCs without VTScada installed (p. 9).

**FLEXIBLE TAG DEVELOPMENT** - Create tags first then lay out graphics or vice-versa. Search & replace any tag on a page.

**200+ GRAPHIC WIDGETS** - A broad selection of data-driven meters, switches, and animations.

**EXTENSIVE IMAGE LIBRARY** - Includes over 4,500 industry-specific images, symbols, and polygons. Import JPG, BMP, PNG, WMF, and EMF files right from your desktop.



**HIGH PERFORMANCE WIDGETS** - Maximize situational awareness using sparklines, analog bars, analog indicators, and spider graphs.

**AUTO ALIGNMENT** - Snap Points effortlessly align and space your graphics for you.

**BACKGROUND TILES** - Create a consistent look and divide pages into functional areas. Drag-and-drop 100+ patterns and simulated lighting effects.

**LAYER SELECTOR** - Easily select one or more elements that are stacked on one another.

**SIMPLE PIPE DRAWING** - Connect graphics with just a few clicks. Use tag values or calculations to change appearance.

**STYLE TAGS** - Create a consistent look for apps or functional areas. Set conventions for groups of Widgets (e.g., red = OFF, green = ON; or vice-versa).

### NEW IN 12.2 - SVG FILE SUPPORT

**Vector image format looks great at any size.**

Scalable Vector Graphics (SVG) images can be resized while still maintaining a sharp appearance. Ideal for applications that see a lot of rescaling. A popular format for logos.

## UNLIMITED CUSTOMIZATION

## The VTScada Scripting Language

LICENSES WITH DEVELOPMENT

```

NewData = Dictionary();
i = 0;
while(loop{
  i < ArraySize(Data.observation_list), { loop through each of i
    loggerSN = Data.observation_list[i].logger_sn;
    sensorSN = Data.observation_list[i].sensor_sn;
    USValue = Data.observation_list[i].us_value;
    USUnit = Data.observation_list[i].us_unit;
    valueTimestamp = Data.observation_list[i].timestamp;
    measurementType = Data.observation_list[i].sensor_measurement;

    { If a dictionary for the logger SN does not exist, create
      IfThen(Valid(ValueType(NewData[loggerSN])) != \VVT\Dict\
        NewData[loggerSN] = Dictionary());

    { If a dictionary for the sensor SN does not exist, create
      IfThen(Valid(ValueType(NewData[loggerSN][sensorSN])) != \VVT\
        NewData[loggerSN][sensorSN] = Dictionary());

    { Only write key value pairs where they have not already been
      IfThen(Valid(NewData[loggerSN][sensorSN][Value])) {
        NewData[loggerSN][sensorSN][Value] = USValue;
        NewData[loggerSN][sensorSN][Timestamp] = valueTimestamp;
        NewData[loggerSN][sensorSN][Unit] = USUnit;
        NewData[loggerSN][sensorSN][Measuring] = measurementType;
      }
    }
  }
}

```

VTScada includes a powerful object-oriented scripting language (like C++) for unlimited customization. Code changes are recorded in the Application Version Control system and can only be imported by authorized developers. Scripting examples include custom services (start tasks or watch for events), custom tag types & drivers, and custom API calls to third-party platforms.

### SCRIPTING DEBUGGING TOOLS

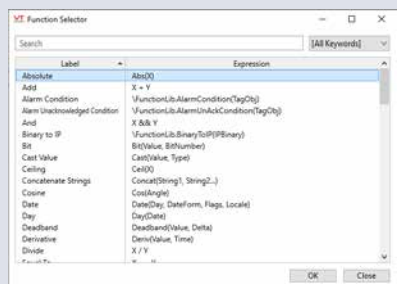
- Million thread history with dead thread identification
- Tracing of all VTScada activities
- Device driver error stats & sent/received
- Source Debugger highlights what code has been run/tested

### FUNCTION LIBRARY

Choose from over 700 pre-built functions to add to expressions to provide advanced functionality.

### EXPRESSION EDITOR

Includes complex pre-built expressions and allows you to create your own functions and add them to the library.



### SOFT LOGIC CONTROL

Alternative data sources for output controls:

- Deadband tags with delay and hysteresis
- Calculation tags with mathematical and logical functions
- Expression tags with complex scripting logic

## IS ONE BACKUP SERVER ENOUGH?

Most platforms only support a primary and a backup server, usually with a single Historian (configured separately). However, conditions serious enough to take out one server can easily take out two, especially if they are co-located. VTScada's integrated design makes distributed hot-backup failover and automatic system backup practical for everyone.

# THE MOST

# RELIABLE

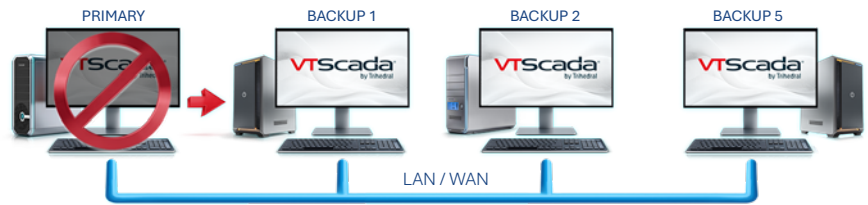
# SCADA SOFTWARE

### HIGH UPTIME FOR SYSTEMS OF ANY SIZE

## N-Level Server Redundancy

REQUIRES MULTIPLE LICENSES

Only VTScada supports unlimited backup servers that can take over polling & logging in sequence if the primary goes offline.



Add synced backups in seconds without fragile custom code.

### REDUCE SYSTEM STRESS

## Server Load Balancing

By default, backups failover according to their order in the Server List. VTScada also lets you increase system resilience by spreading CPU load for most services across multiple PCs.

### PROTECT ACCESS FOR REMOTE USERS

## Thin Client Server Failover

Thin Client Licenses are shared across applications. If a Thin Client Server goes offline, client connections seamlessly switch to the next designated server in the Server List without reauthentication.

### UPGRADE SERVERS WITH CONFIDENCE

## Services Page & Widget

- View status of services in multi-server applications
- Manually transfer services before taking servers offline
- Takes the stress out of hardware & software updates

### AUTOMATICALLY BACK UP YOUR WHOLE SYSTEM

## System-Wide Bi-Directional Synchronization

REQUIRES MULTIPLE LICENSES

Integrated architecture and fast networking allow every server to be a real-time disaster backup.



Sync geographically-separated servers over LAN or WAN.

### MONITOR & ALARM CRITICAL RESOURCES

## Server & Network Health Monitoring

- **SNMP Driver** - UPS time remaining, network switch flow
- **Network Status** - Connection status between servers
- **Workstation Status** - CPU usage, remaining drive space
- **Driver Multiplexer** - Network failover notifications

### MULTI-SITE ARCHITECTURE

## Alarm Database Management

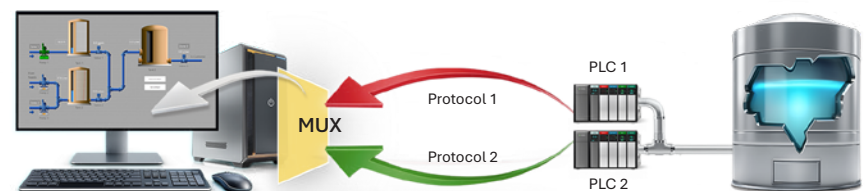
Configure any number of Alarm & Event DBs to separate operational alarms (e.g., plants and processes) for targeted alarm processing.

### FAILOVER FOR NETWORKS & PLCs

## Driver Multiplexer Tag (DriverMUX) STANDARD

Seamlessly switch to a back-up comms network (serial, ethernet, dial-up, DNP3, radio) or redundant PLCs & RTUs.

- Upgrade equipment without data loss
- Load share by alternating devices or networks
- Create OPC Server redundancy
- Log every failover or restoration event



Easily configure failover to redundant networks or devices.

### MULTIPLE PC NETWORK CONNECTIONS SUPPORT

## Multi-Homed Networks

Use multiple network interfaces on a single server to improve the network failure tolerance of distributed systems or to separate SCADA system network usage from the business system network.

### NO LOGGED-ON WINDOWS USER

## VTScada as a Service STANDARD

Perfect for cloud-based applications or when IT policy forbids unattended logged-on users. VTScada service auto-starts with Windows®.

# MULTI-USER CONFIGURATION MANAGEMENT

## WORK ONLINE WITHOUT INTERRUPTING YOUR PROCESS

### Real-Time Multi-User Configuration LICENSES WITH DEVELOPMENT

Edit tags, displays, and system properties without stopping the application and disabling alarm management. Multiple users can develop simultaneously without a configuration server. Conflicts between users are easily resolved. Configuring on a live system allows you to work with live I/O and apply changes without restarting the application. You can even perform configuration from PC-based Thin Clients.

## DEPLOYMENT JUST GOT EASIER

### QR Code License Activation For Offline PCs - *New in 12.2*

Use an online mobile device to scan a QR code that opens your 16-digit activation code. (You can still copy the URL to an online device or call support.)

## Online Deployment

**DEPLOY** - After installing VTScada on the new server, pull the app from a networked server with a few clicks. When added to the Server List, this PC becomes a hot-backup server with synced Historians, change list, user accounts, and Alarm/Event databases.

**UPDATE** - Once you commit and validate your changes on one server, push them out to all networked application servers.

**SUPPORT** - Securely VPN into a client's system to fix issues or add features with no need to travel to site.

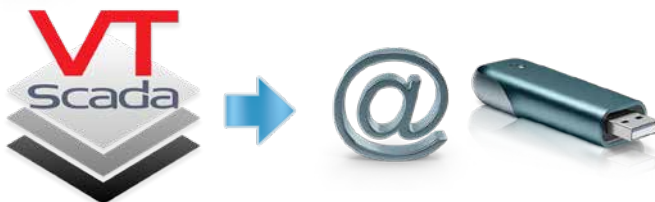


Multiple developers can make simultaneous changes without a lockout server.

## Offline Deployment (ChangeSet Files)

**DEPLOY** - Easily distribute new or updated applications to multiple offline computers with a single VTScada ChangeSet file.

- Reuse work by cloning existing applications
- Update OEM layers without affecting end-user applications



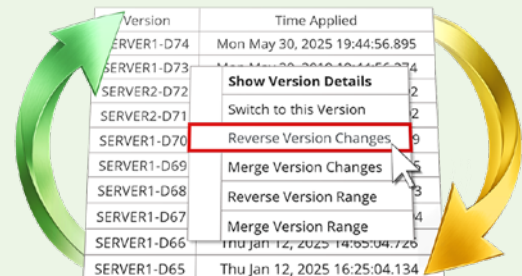
**SUPPORT** - Non-technical users can easily generate ChangeSet files to send to integrators via email, FTP, or thumbdrive. Integrators can add features, fix issues, or roll back changes. Users can apply modified ChangeSets without system restart.

## TRACE ANY CHANGE – UNDO ANY CHOICE

### Application Version Control (AVC)

ROLLBACK REQUIRES A LICENSE WITH DEVELOPMENT

AVC provides change traceability, enhances app management in networked environments, and improves recovery from unexpected effects of configuration. **No configuration required.**



- View all changes by all users on all servers
- See side-by-side incremental changes in each version
- Instantly switch to any previous good version
- Merge changes in multi-developer environments
- Undo specific changes at any time in the past without universal rollback
- Change history automatically stored on each synced server

## THE BEST SUPPORT IN THE INDUSTRY

### The VTScada Support Team

OPTIONAL YEARLY RENEWALS

Frustrated trying to get help from a major supplier? Our in-house team of programmers and engineers provide a level of personal support that keeps customers coming back for upgrades, enhancements, and consulting services as their facilities grow and evolve.

### LICENSES INCLUDES 90 DAYS OF SupportPlus Service

- Includes phone and email support **Monday to Friday\*, 8 AM - 7 PM ET (5 AM - 4 PM PT)** as well as the ability to download and install the latest version any time
- Optional renewals are **15%** of the original software price per year and never increase **while you remain current**
- Covers issues specific to VTScada. Does not include hardware troubleshooting, training, or system design
- 24/7** and **application-specific** packages available

### SYSTEM REQUIREMENTS

Applications require one or more VTScada licenses each installed on separate Windows operating systems.

**HARDWARE** - Systems under 10K I/O typically don't require server-grade computers.

**OPERATING SYSTEMS** - Supports Windows 7 up to the latest version of Windows.

**THIN CLIENTS** - Accessible from devices that support HTML5-compliant browsers.

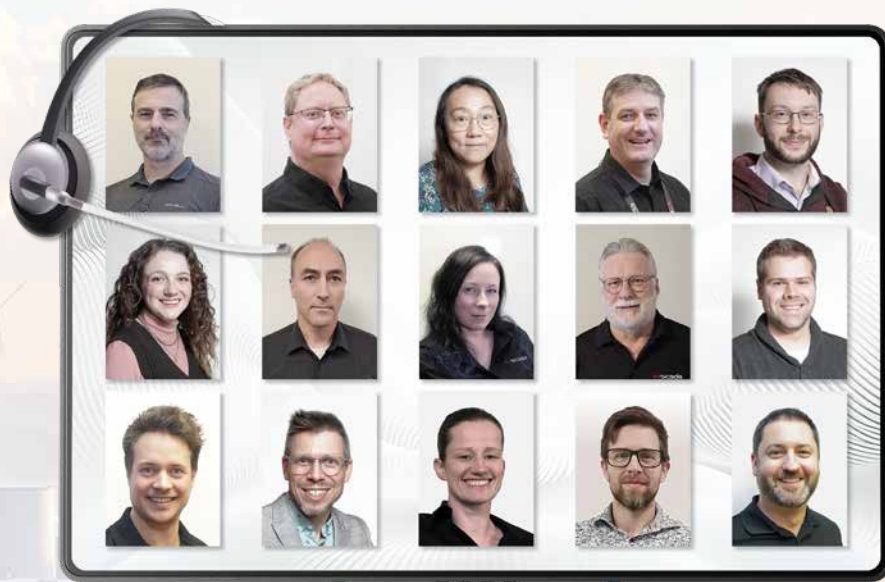
Actual requirements depend on your specific needs.

**SEE DETAILED RECOMMENDATIONS**  
[VTScada.com/requirements](https://vtscada.com/requirements)

### CHOOSE LICENSES IN THREE EASY STEPS

Use the steps to see how our licensing works. For pricing information, visit [VTScada.com/pricing](https://vtscada.com/pricing).

# TECHNICAL SUPPORT AND RENEWALS



Base VTScada License	1: Select a tag limit.	2: Add optional built-in features to each server.			3: # of remote users.
RUNTIME & HISTORIAN	I/O TAG BANDS	+ DEVELOPMENT	+ ALARM NOTIFICATIONS	+ THIRD-PARTY DATA	+ THIN CLIENTS
<i>Fully integrated design</i>	<i>Pay only for what you need</i>	<i>Multi-user configuration via PC or mobile</i>	<i>No need for a third-party add-on product</i>	<i>Only if Development is not added</i>	<i>Concurrent connections for PCs &amp; Mobile devices</i>
Every License Includes	Pick One	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pick One
<b>OPERATOR WORKSTATION</b> <ul style="list-style-type: none"> <li>HMI</li> <li>Alarms &amp; Events Management</li> <li>Trends &amp; Reports</li> <li>Operator Logbooks</li> <li>Slippy Mapping</li> <li>Security</li> </ul>	<input type="checkbox"/> UP TO 1K <input type="checkbox"/> UP TO 5K <input type="checkbox"/> UP TO 10K <input type="checkbox"/> UP TO 25K <input type="checkbox"/> UP TO 50K <input type="checkbox"/> 100,000 TO UNLIMITED	Idea Studio Screen Creator Tag Management Third-Party Data Change Deployment Scripting & Debugging Version Control	<ul style="list-style-type: none"> <li>Email</li> <li>SMS</li> <li>Voice</li> <li>VoIP</li> </ul>	<ul style="list-style-type: none"> <li>Sparkplug B</li> <li>Excel Plugin</li> <li>ODBC</li> <li>OPC</li> <li>WEB Services</li> </ul>	<input type="checkbox"/> Single <input type="checkbox"/> 5-Pack <input type="checkbox"/> Unlimited
<b>APPLICATION SERVER</b> <ul style="list-style-type: none"> <li>I/O Drivers</li> <li>Enterprise Historian</li> <li>I/O Server</li> <li>Synchronization</li> <li>Version Control</li> </ul>					

# MODERN SECURITY THAT'S SCALABLE

**BUILT-IN SECURITY INTERFACE** VTScada's integrated design makes system-wide security management simple, scalable, and infinitely configurable. Authorized users can manage security from a standard operator interface and deploy changes across the system without restarting.

**INTEROPERABILITY WITH INDUSTRY STANDARDS** VTScada is a commercially-available off-the-shelf (COTS) platform used in SCADA/HMI systems across numerous industries. Integration for use-specific deployment is key for compliance to industry standards such as...

- NIST SP 800-82 - Guide to industrial control room security
- NERC/CIP - Power grid infrastructure cyber infrastructure protection
- IEC 62443 MIL 3 - VTScada product development process
- ABS/NV/Lloyds - Marine reliability standards
- ISA 101 (HMI) & 18.2 (SCADA alarms management)
- API 1165 (Petroleum HMI), & 1167 (Petroleum alarms management)
- HMSA 49 CFR Parts 192 & 195 - Control room management for gas and hazardous liquid pipelines

## UNPARALLELED TRACABILITY

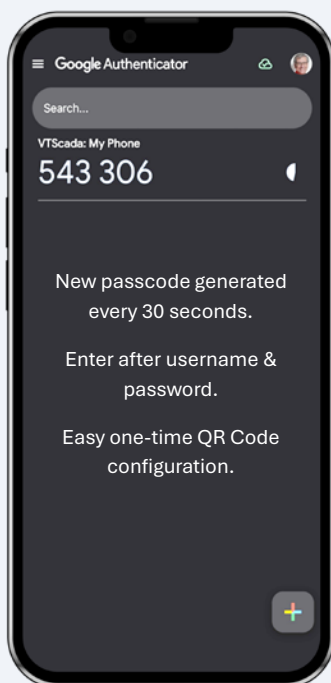
**OPERATIONS** - Activity like setpoint changes, log on/off, and security changes made from servers, Thin Clients, and the Alarm Notification System are recorded as events in the Alarm Manager (P. 8).

**CONFIGURATION** - Native Application Version Control (P. 13) automatically tracks changes on all workstations and automatically restores changes to config files by unauthorized users or malware.

**REMOTE ACCESS** - Thin Client Monitor displays activity and lets you message or disconnect clients. Logs user IP, computer name, screens viewed, and session length.

## SHARE DATA BEYOND YOUR SECURE NETWORK RISK FREE

**New in 12.2 - VTScada Data Diode** - Transmit historian data from a high-security application to an external application via Data Diode. A device that can only transmit information in one direction: letting data out while maintaining the invulnerability of the secure network.



## SMART ACCOUNT MANAGEMENT

Rules & Roles let you quickly generate and manage specialized user accounts.

**RULES** - Sets of tags, privileges that allow you to tune what users can do and from where

**ROLES** - Combine Rules and other Roles to match the duties of specific jobs (e.g., Plant 1 Operator)

## SIMPLE SECURE LOGIN OPTIONS

### NEW - Two Factor Authentication with TOTP

Once enabled, users must provide their password and a time-sensitive, one-time passcode from an authenticator each time they sign in. Set-up is easy. No internet connection required.

**WINDOWS® SECURITY INTEGRATION** - Login using your Windows credentials. No need to manage both Windows and VTScada accounts.

**PROXIMITY CARD READERS** - Log on the same way you enter secured buildings. Set Operator Notes to require authentication.

**OPENID CONNECT®** - Provides sign-in and Two-Factor Thin Client authentication.



## BUILT SECURE FROM THE GROUND UP

### IEC-62443-4-1-ML 3 DEVELOPMENT CYCLE COMPLIANCE

VTScada's Development Environment is certified compliant with IEC 62443-4-1 Maturity Level 3 Security For Industrial Automation And Control Systems.

## ADVANCED ENCRYPTION & NETWORK PROTECTION

The VTScada Security Manager complies with industry-standard RFCs for security.

**ADVANCED ENCRYPTION** - For the Security Database and security credentials passed between clients and servers.

**IPv4 & IPv6 ADDRESSING** - IPv4 addresses are running out. IPv6 provides improved performance and security.

**ENCRYPTED NOTES** - Time-stamped operator and trend notes can't be deleted or modified.

**HASHED USER PASSWORDS** - Credentials not held in a form that can be decrypted and recovered.

**TLS/VPN SUPPORT** - Thin Clients support Transport Layer Security (TLS), firewalls, and VPN access.

**TLS EMAIL SUPPORT** - Alarm Notifications support SMTP email servers requiring TLS (e.g., Gmail®).

**BLOCK/ALLOW IP ADDRESSES** - Control which IPs may or may not connect.

**CODE TAMPERING DETECTION** - On startup, VTScada detects unauthorized changes to source files and restores approved files from the tamper-proof repository.

**SERVER & PORT FAILOVER** - Easily configure automatic failover for SCADA servers and communication ports.

**SINGLE LOG-IN** - OpenID Connect lets Thin Client users log in with the same credentials across all Enterprise applications.

# BECOME A **VTScada** EXPERT

**VTScada**LIGHT

The free version of our award-winning software for home and industrial use.

- Up to 50 I/O
- Never expires
- 1 Thin Client

[VTScada.com/START](https://www.vtscada.com/START)

## VTScada Academy

Learn what you need at your own pace in this free on-line learning environment.

### 15-MINUTE TUTORIAL VIDEO

The fastest way to learn the VTScada fundamentals.



## LIVE TRAINING

CHOOSE AN IN-PERSON OR REMOTE INTERACTIVE TRAINING COURSE

### OPERATION & CONFIGURATION

An introduction for SIs, OEMs, consultants, operators, maintenance, and IT staff.

### ADVANCED CONFIGURATION

Advanced development techniques that go beyond the standard development tools.

### SCRIPTING & PROGRAMMING

Advanced customization for experienced SIs & OEMs using VTScada's powerful Scripting Language.

REGISTER NOW

[VTScada.com/TRAINING](https://www.vtscada.com/TRAINING)

## MOVE FORWARD

### DOWNLOAD PRICE LISTS

[VTScada.com/PRICING](https://www.vtscada.com/PRICING)

### OS & HARDWARE REQUIREMENTS

[VTScada.com/REQUIREMENTS](https://www.vtscada.com/REQUIREMENTS)

### DOWNLOAD THE DRIVER LIST

[VTScada.com/DRIVERS](https://www.vtscada.com/DRIVERS)

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**1 (800) 463-2783**

WORLDWIDE  
**1 (902) 835-1575**

UNITED KINGDOM  
**+44 (0)1224 258910**

ONTARIO  
**1 (905) 760-9399**  
Distributor CB Automation

WESTERN CANADA  
**1 (403) 805-1972**  
Distributor BettsM Controls

FIND YOUR LOCAL SALES CONTACT  
[VTScada.com/CONTACT-US](https://www.vtscada.com/CONTACT-US)  
[info@trihedral.com](mailto:info@trihedral.com)

## Get **HELP**

TECHNICAL SUPPORT: [support@trihedral.com](mailto:support@trihedral.com)

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**+44 (0)1224 258910**

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