



## PRODUCT OVERVIEW

OptiZeus is an enterprise-grade SCADA/HMI platform purpose-built for pharmaceutical, biotech, and industrial manufacturing. It combines real-time monitoring, ISA-88 batch control, industrial historian, AI-powered configuration, and built-in GAMP5 validation in a single web-based platform. Deployable on Windows or Linux, accessible from any device via browser, with native support for OPC UA, Modbus, EtherNet/IP, S7, MQTT, BACnet, and more.

<b>9+</b> Protocol Drivers	<b>6+</b> AI Providers	<b>14+</b> Security Layers	<b>6</b> Database Engines	<b>10</b> GAMP5 Documents	<b>&lt;1ms</b> Tag Scan Rate	<b>∞</b> Tag Scaling Ent+	<b>500+</b> Installations Worldwide
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## GENERAL SPECIFICATIONS

Product Name	<b>OptiZeus SCADA</b>
Version	<b>v2.5.4</b>
License Model	<b>Annual subscription / Perpetual</b>
Server OS	<b>Windows Server 2016+ / Ubuntu 20.04+</b>
Client Access	<b>Any modern web browser (Chrome, Edge, Firefox)</b>
Desktop App	<b>Electron — kiosk &amp; touch screen mode</b>
Mobile Access	<b>Progressive Web App (PWA) — iOS &amp; Android</b>
Architecture	<b>Node.js server + WebSocket real-time engine</b>
Install Modes	<b>Server+Client or Client-only</b>
Multi-language	<b>English, Hebrew, Arabic with native RTL</b>
UI Strings	<b>700+ fully translated interface strings</b>
Containers	<b>Docker-compatible deployment</b>

## COMMUNICATION PROTOCOLS (9+ Drivers)

OPC UA	<b>Client + Server · Certificate security · Sub Batch read · Multi-device connections</b>
Modbus TCP	<b>RS-232 / RS-485 serial communication</b>
Modbus RTU	<b>Allen-Bradley / Rockwell · 4 parallel threads</b>
EtherNet/IP	<b>S7-300/400/1200/1500 · Batch read (800+ tags)</b>
Siemens S7	<b>Broker · Subscribe/Publish · QoS levels</b>
MQTT	<b>Building Automation and Control Networks</b>
BACnet	<b>Direct serial port communication</b>
Serial RS-232/485	<b>Web API polling and integration</b>
HTTP / REST	<b>SQL query polling as live data source</b>
Database Direct	<b>MicroLogix / legacy Allen-Bradley devices</b>
PCCC	

## TAG & DATA SPECIFICATIONS

Tag Capacity	<b>Starter 100 / Basic 1K / Pro 10K Enterprise 20K / Enterprise+ Unlimited</b>
Scan Rate	<b>Configurable — down to &lt;1 ms resolution</b>
Data Types	<b>Bool, Int16/32/64, Float, Double, String, DateTime</b>
Quality Indicator	<b>Good / Bad / Uncertain (OPC UA standard)</b>
Tag Faceplates	<b>Live value, alarms, timestamps, trend popup</b>
Super Objects	<b>Reusable composite tag + screen components</b>
UDT Support	<b>User-defined types with template inheritance</b>
Store & Forward	<b>Local buffer during network / DB outage</b>
Export Formats	<b>PDF, CSV, Excel</b>

## DATABASE ENGINES (6 Supported)

SQLite	<b>Embedded · Zero config · Dev / demo use</b>
SQL Server	<b>Enterprise · Recommended for production</b>
MySQL	<b>Open-source relational · Cloud-compatible</b>
PostgreSQL	<b>Advanced open-source · TimescaleDB ready</b>
InfluxDB	<b>Time-series optimized · IoT workloads</b>
MongoDB	<b>Document database · Flexible schemas</b>





## HMI RUNTIME ENGINE

Display Engine	SVG-based with real-time tag binding
Symbol Library	50+ industrial SVG components built-in
Components	Tanks, pumps, valves, pipes, instruments
Screen Builder	Drag-and-drop with snap-to-grid
Super Objects	Reusable objects with embedded logic
Tag Binding	Live two-way read/write per element
Multi-Screen	Unlimited screens per project
Kiosk Mode	Electron desktop app, full-screen
Touch Support	Multi-touch capacitive screens
Animations	Color, visibility, rotation, size
Pop-ups	Tag faceplates, trend, alarm detail
Role Display	Per-role screen visibility rules

## INDUSTRIAL HISTORIAN

Storage	File-based archive with DB indexing
Compression	Swinging Door Algorithm — config. deadband
Retrieval Modes	Raw, Interpolated, Avg, Min, Max, Count
Additional Modes	First, Last — 8 modes total
Trend Viewer	Multi-pane drag-to-zoom charts
Alarm Overlay	HH/H/L/LL bands on every trend chart
Alarm Markers	Trigger points visible on timeline
Multi-Tag	Overlay multiple tags in one chart
Batch Overlay	Compare multiple batch runs
Export	PDF trend report · CSV data export
Store & Forward	Buffer during network / DB outage
Retention	Configurable per tag or global policy

## ISA-88 BATCH CONTROL ENGINE

Standard	Full ISA-88 / S88 compliance
Hierarchy	Procedure → Unit Proc → Operation → Phase
Recipe Engine	SFC Sequential Function Chart execution
Equipment Model	Physical model configuration per S88
Recipe Mgmt	Versioning with approval workflow
Parameters	Target / Min / Max per step
Batch Tracking	Real-time execution status & visualization
EBR	Electronic Batch Record auto-generation
PLI Support	Process Logic Interface
Comparison	Batch overlay on historian trend charts
Scheduling	Product-to-recipe linking & planning
Compliance	21 CFR Part 11 e-signature on batch close

## ALARM MANAGEMENT (ISA-18.2)

Standard	ISA-18.2 compliant alarm system
Alarm Types	Analog HH/H/L/LL · Boolean · Bit-based
Flood Control	Smart auto-grouping by area / source
Shelving	Configurable duration with reason code
Acknowledge	Individual or bulk · CFR 11 e-signature
Notifications	Email, SMS (GSM), WhatsApp, Telegram
Scheduling	User groups with weekly time windows
Trend Overlay	Alarm bands shown directly on trend chart
Related Tag	Linked analog tag for root-cause analysis
SOE	Sequence of Events — 1ms resolution
Journal	All events persisted in SQL Server
Filtering	Dead-band and on-delay per alarm

## AI ASSISTANT & ANALYTICS

Providers	Claude, GPT-4, Gemini, Ollama, Amazon Bedrock	Anonymous Det.	Z-score, rate-of-change, flatline	Voice Cmds	Web Speech API integration
AI Creates	Tags, alarms, screens, recipes, SFC Charts	SRG	X-bar/R, UCL/LCL, Cp/Cpk tracking	Reports	Auto PDF/CSV with email schedule
GAMP5 Docs	10 auto-generated via natural language	KPI Widgets	6 types: value, gauge, sparkline	Data Privacy	On-premise — zero cloud dependence





## SECURITY & CYBERSECURITY (IEC 62443)

Transport	<b>HTTPS / TLS end-to-end encryption</b>
Authentication	<b>MFA / TOTP two-factor auth</b>
Access Control	<b>5-level Role-Based (RBAC)</b>
Directory	<b>LDAP / Active Directory SSO</b>
Brute Force	<b>Login rate limiting &amp; lockout</b>
SQL Security	<b>Parameterized queries — injection-proof</b>
API Security	<b>Rate limiting per endpoint</b>
Session Mgmt	<b>JWT tokens with configurable expiry</b>
Timing Attack	<b>Timing-safe authentication checks</b>
Audit Trail	<b>Every action timestamped with IP &amp; user</b>
OT/IT Separation	<b>DMZ with OPC-UA Proxy/Broker</b>
Total Layers	<b>14+ independent security controls</b>

## DEPLOYMENT & REDUNDANCY

Server Roles	<b>Standalone / Test / Production / Backup</b>
Deploy Workflow	<b>1-Click selective Test → Production</b>
Deploy Audit	<b>Full change log on every deployment</b>
Failover	<b>Client auto-reconnect to backup server</b>
Hot Standby	<b>Continuous backup server sync</b>
Install Modes	<b>Server+Client or Client-only</b>
Windows Service	<b>Managed via WinSW</b>
Linux Service	<b>Managed via systemd unit</b>
Containers	<b>Docker-compatible</b>
Multi-Site	<b>Central + remote server topology</b>
Remote Access	<b>Secure HTTPS + JWT — no VPN required</b>
VPN	<b>Fully compatible with corporate VPN</b>

## REGULATORY COMPLIANCE

FDA	<b>21 CFR Part 11 — full compliance</b>
E-Signatures	<b>Password-authenticated with reason code</b>
Audit Trail	<b>Immutable log of all operator actions</b>
GAMP5	<b>Category 4 — configured product</b>
IEC 62443	<b>Industrial cybersecurity standard aligned</b>
ISA-88	<b>Batch control standard compliant</b>
ISA-18.2	<b>Alarm management standard compliant</b>
Auto-Logout	<b>Configurable inactivity timeout</b>

## GAMP5 VALIDATION DOCUMENTS (Auto-Generated)

<b>URS</b> User Requirements Specification	<b>DS</b> Design Specification
<b>FS</b> Functional Specification	<b>IQ</b> Installation Qualification
<b>OQ</b> Operational Qualification	<b>PQ</b> Performance Qualification
<b>RA</b> Risk Assessment (FMEA)	<b>TM</b> Traceability Matrix
<b>VSR</b> Validation Summary Report	<b>AT</b> Audit Trail Configuration

## MINIMUM SYSTEM REQUIREMENTS

SERVER (Windows)	SERVER (Linux)	CLIENT (Browser / App)
<b>OS:</b> Windows Server 2016 / Win 10+	<b>OS:</b> Ubuntu 20.04 LTS / Debian 11+	<b>Browser:</b> Chrome 90+ / Edge 90+ / Firefox 88+
<b>CPU:</b> 4-core x64 · 2.0 GHz+	<b>CPU:</b> 4-core x64 · 2.0 GHz+	<b>RAM:</b> 4 GB minimum
<b>RAM:</b> 8 GB min / 16 GB recommended	<b>RAM:</b> 4 GB min / 8 GB recommended	<b>Network:</b> LAN or HTTPS over WAN / VPN
<b>Storage:</b> 50 GB SSD + historian volume	<b>Storage:</b> 20 GB SSD + historian volume	<b>Mobile:</b> iOS 14+ / Android 10+ (PWA)
<b>Network:</b> 100 Mbps to field devices	<b>Service:</b> Managed via systemd	<b>Desktop:</b> Electron app — Win / macOS / Linux

## LICENSING TIERS

STARTER	BASIC	PROFESSIONAL	ENTERPRISE	ENTERPRISE+
<b>Free</b>	<b>\$499/yr</b>	<b>\$1,499/yr</b>	<b>\$4,999/yr</b>	<b>Contact</b>
100 Tags · 5 Screens · 1 Client	1K Tags · 10 Screens · 2 Clients	10K Tags · 50 Screens · 5 Clients · ISA-88	20K Tags · Unlimited Screens · AI · GAMP5	Unlimited everything · Full ISA-88 · Dedicated support

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