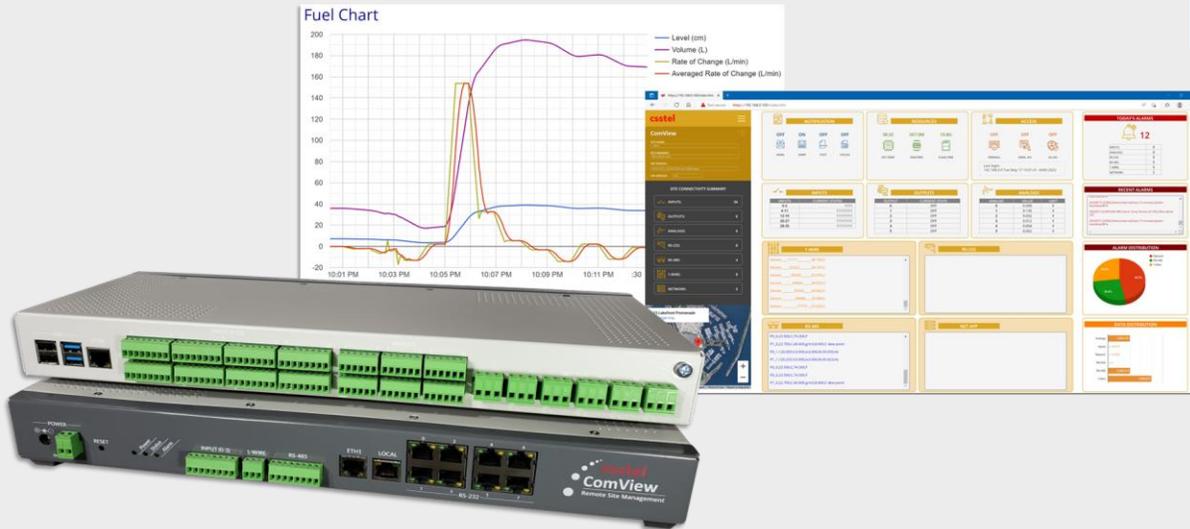




# ComView

versatility . adaptability . longevity

# ComView



ComView is a remote site management gateway, customizable to monitor and manage virtually the entire spectrum of remote site infrastructure and site conditions.

With ComView, users can maintain constant visibility and control over their remote sites, improve operational efficiency, reduce overall operating and maintenance cost, reduce downtime and service interruptions, and improve quality of services and their customer satisfaction.

“ComView solutions bring *simplicity* with a *modern* approach to addressing remote site management needs to improve operational efficiency and cost effectiveness

# Typical Applications

- Telecom facility management
- Radio communication station management
- Utilities substation management
- Building management
- IT/data center management
- General site management



# Sample Applications

A short list of sample user applications includes:

- ✓ Remote telemetry unit
- ✓ SCADA remote terminal unit (RTU)
- ✓ Secure remote site access
- ✓ Onsite device mediation and alarm monitoring
- ✓ Automated centralized data acquisition
- ✓ Interactive and automatic control of onsite devices
- ✓ Sensor contacts and equipment alarm relays monitoring
- ✓ Environmental conditions monitoring
- ✓ Serial data collection and monitoring
- ✓ TCP/UDP socket-based ASCII data collection and monitoring
- ✓ SNMP trap collection and monitoring
- ✓ Syslog message collection and monitoring
- ✓ AC and DC power systems monitoring
- ✓ Energy consumption monitoring
- ✓ Fuel monitoring

ComView can be customized to meet user-specific applications

# Hardware Platform



ComView NXs



ComView NXM



ComView NXL



ComView NXx

- **CPU:** quad-core Cortex-A72 64-bit @ 1.5GHz
- **Memory:** 2 GB RAM + 32 GB (min.) microSD card
- **Networking:** 1Gb Ethernet + 10/100 Ethernet
- **Inputs:** 4x non-isolated + 32x isolated
- **Outputs:** 6x output relays, SPDT (1 FORM C), 10A/250VAC
- **Analogs:** 6x isolated analog inputs, 12-bit A/D converter, pre-scaled for 72V, 36V, 18V, Vin, 4-20mA
- **1-Wire:** dedicated 1-Wire bus controller, support for up to 64x DS18B20 digital thermometers
- **Serial:** 8x RS-232
- **RS-485:** 2x isolated ports, support for up to 64 Modbus devices
- **USB:** 2x USB 3.0 + 2x USB 2.0
- **Real-time clock** with lithium battery backup
- **Supervisory & reset** controller
- **Multi-functioned reset** pushbutton
- **LED indicators:** Power, Status, Alarm
- **Power supplies:** dual 9Vdc/25W, 5W typical
- **Physical properties:**
  - Dual tone grey painted aluminum
  - 1U 19" rack mountable, wall mountable, and desktop
  - Dimensions: 16.3"x 6.3"x1.72" (WxDxH)
  - Weight: approx. 1.2kg

Note: Hardware features are product model dependent



## Software Platform

Developed with versatility, adaptability, and longevity in mind, ComView software platform is based on Ubuntu Server 64-bit 22.04 LTS (Long Term Support), a distribution variant of widely used Linux operating system, Python programming language, micro web framework Flask, NGINX web server, and other Debian packages. These popular and widely used components help ComView solutions remain relevant for years to come.

# ComView

## FEATURE HIGHLIGHTS

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MODULAR SOFTWARE ARCHITECTURE

02

ONE MEDIATING PLATFORM

03

VERSATILITY

04

DISTRIBUTED

05

DO-IT-YOURSELF

06

SECURE ACCESS

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ADVANCED ALARM MONITOR

08

FLEXIBLE ALARM DELIVERY

09

NMS INTEGRATION SIMPLIFIED

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HIGH UPTIME, HIGH AVAILABILITY



## MODULAR SOFTWARE ARCHITECTURE

Modular software architecture enables the delivery of ComView solutions as a collection of user apps that can be individually enhanced and customized, or new apps can be readily added to meet user operational requirements.

Software modularity together with ComView software platform makes “Do-It-Yourself” possible. With their skill sets and development resources widely accessible, users can readily enhance ComView solutions to their specific requirements, if they so desire.

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## ONE MEDIATING PLATFORM

As compared to using disparate solutions, ComView platform provides various physical interfaces and associated user apps for users to consolidate the connectivity and to mediate with different types of onsite devices using one ComView platform.

Users can now manage their remote sites with consistency and uniformity to improve their operational efficiency and cost effectiveness.

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## VERSATILITY

ComView platform offers a suite of user apps, each developed with flexibility and adaptability in mind. The app operating parameters, data conversion and mappings, data record formats, and other parameters are user definable.

Furthermore, user apps are modular and written in Python, a popular and widely used high-level programming language, and therefore they can be readily enhanced and customized, or new app can be developed to meet user-specific operational requirements - now and in the future.

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## DISTRIBUTED

ComView platform includes unique capabilities that can perform a number of site management tasks onsite and in real-time, enabling users to implement distributed site management to help reduce decision-making time and operational overheads.

With ComView, onsite tasks such as taking automatic corrective action on alarm, executing user scripts in response to event, application-specific data processing, report generation, and data visualizations for trend analysis are now possible.

Instant visibility into sites is also possible with ComView web-based dashboard showing users site status, activities at physical interfaces, current alarms, alarm logs, system resources and their usage statistics, and other relevant information.

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## DO-IT-YOURSELF

ComView unique software architecture makes “Do-It-Yourself” possible. If so desire, users can easily delve into software development that can range from simple software enhancements and customizations to new user app programming.

DIY is made possible with user apps written in Python programming language, accessible data streams via named pipes, and CSV-formatted application data files. Users can customize existing app functionality by modifying its Python code, develop new app by listening to named pipes for data streams, and create new reports by using CSV-formatted application data online or offline.

The availability of DIY gives users that peace of mind, knowing that they are in control of ComView solutions.

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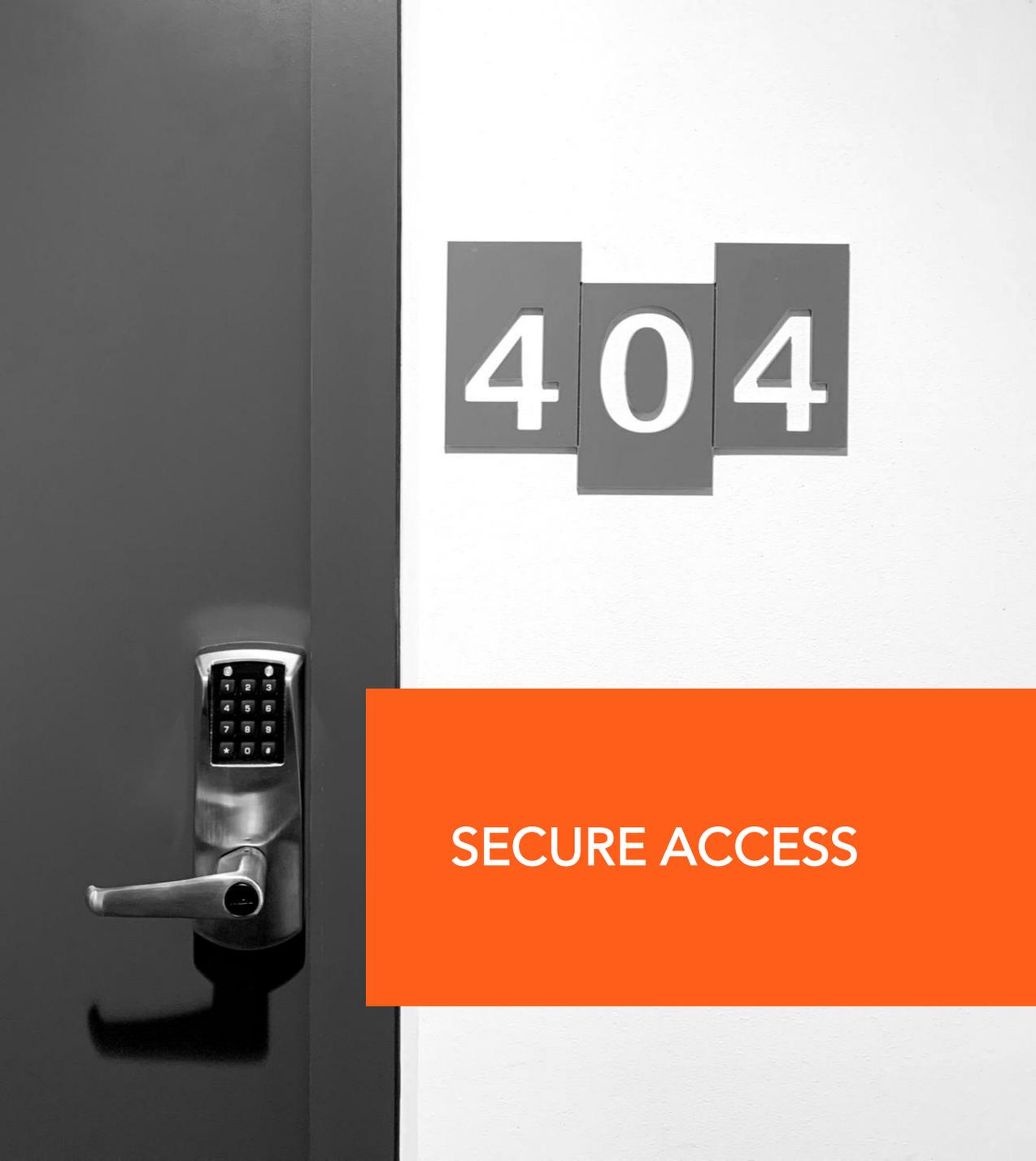
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## SECURE ACCESS

Access to ComView is secured with restrictive IP packet filtering firewall to drop all traffic except traffic from user-predefined IP addresses. Once accepted, all login attempts will be authenticated.

Access to ComView web pages can only be allowed with Two-Factor authentication and user authorization. For SSH access to ComView, Google Authenticator 2FA can be applied to add another layer of access security. In the meanwhile, all data transfers are SSL-encrypted to protect data confidentiality.

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## ADVANCED ALARM MONITOR

ComView lets users define alarm conditions and action to take on alarm. Alarm condition can be simple timed Low/High state to monitor contact input, fall-below/rise-above/equal threshold with bandgap to monitor any measured variable, and regular expression to monitor any ASCII data stream from serial ports, TCP/UDP network sockets, SNMP traps, and syslog messages.

Action to take automatically includes activating output relays to control onsite devices and/or executing user script to perform specific tasks.

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## FLEXIBLE ALARM DELIVERY

ComView can notify users in multiple ways and locations. Delivering alarm via email, SNMP trap/inform, http POST, and syslog ensures it reaches the intended recipients at various locations such as global network center, regional network center, and field personnel for attention and corrective action.

ComView also notifies users when the alarm condition previously reported has been cleared. This helps users reduce unnecessary operational workload.

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## NMS INTEGRATION SIMPLIFIED

Integrating ComView into users existing NMS is simplified. SNMP-based NMS can readily receive SNMP traps/informs for alarms while it can poll ComView SNMP agent for data. Web-based NMS can have simple frontend script to receive alarms posted in common JSON format. Syslog-based NMS can receive syslog messages for alarms.

ComView automatically pushes its data files to remote servers for further backend data processing. For real-time site details, users simply log on ComView web interface to view its dashboard, data streams, reports, and data visualizations.

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## HIGH UPTIME, HIGH AVAILABILITY

Operating in a 24/7 unattended environment requires system high uptime and high availability. ComView platform implements a system supervisor for self-monitoring and self-control with user-definable operating parameters to help achieve these goals.

Network links, system soft restart, system reboot can be scheduled to auto restart, while system services and user applications are continually monitored and auto restarted, if necessary, to ensure the overall operational integrity of ComView.

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# About CSSTEL

CSSTEL is a privately held developer and manufacturer of leading-edge remote site monitoring and control solutions since 1997 with installations in over 30 countries around the world.

We help telecom service providers, carriers, financial institutions, healthcare providers, government agencies, utilities, and other public and private sector organizations maintain constant visibility and control over their remote site infrastructure.



# explore the possibilities

Whether you are a prospective ComView user, a potential business partner, a technology solution acquirer, or an investor, we cordially invite you to explore the possibilities with us!



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