Valimotie 13A,
Helsinki 00380
T: +358 50 483 9978
sales@kronometrix.com
w w w . k r o n o m e t r i x . c o m

An easy-to-use, real-time distributed data fabric providing all the necessary functionalities in a simple package. For ICT data-centres, co-location providers, ISV, IoT operators, weather and environment solution providers and agencies.

KRONOMETRIX
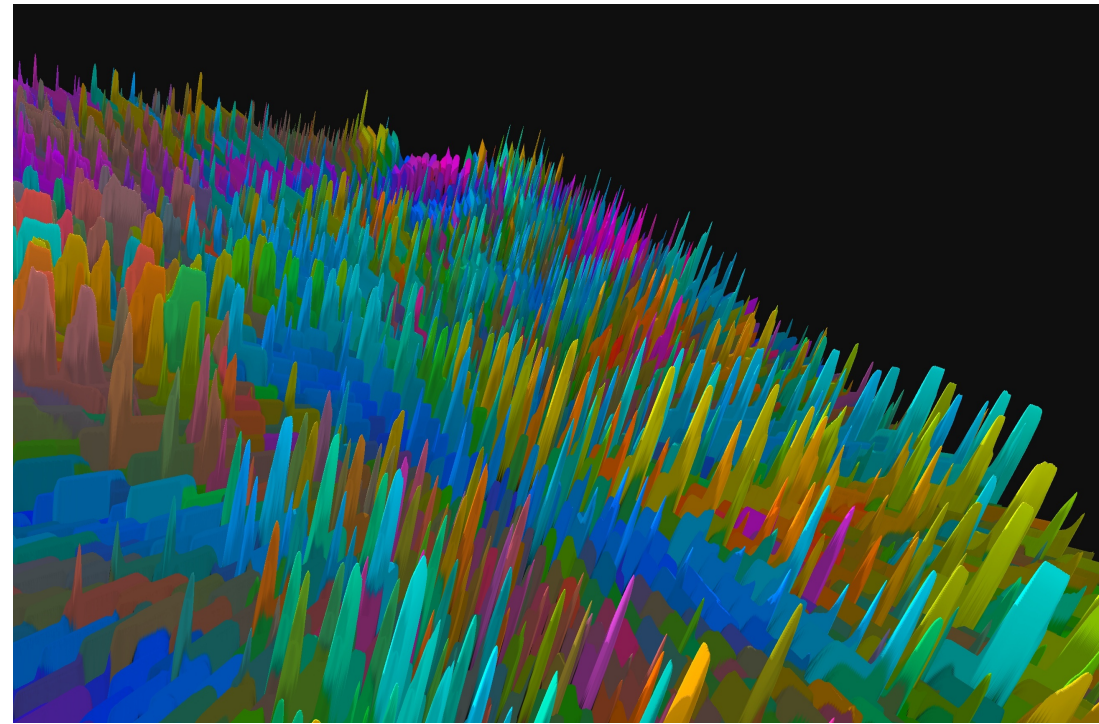## DATA FABRIC

UNIFIED SETUP

Kronometrix Data Fabric connects to a wide variety of data sources: everything from IoT devices, ICT enterprise to weather and environment sensors. In addition to multifaceted data ingress, the distributed data fabric provides high-speed transport for data consolidation, analysis and visualization in real-time. Designed for IoT or data providers, the fabric contains all needed software components

to process, analyze, and visualize data:

- 64-bit operating system
- data recording and transport utilities
- the data cortex, to visualize and analyze all important data

*See and act. Get and use the best data, essential for analysis*

To reduces the number of repetitive alarms, Kronometrix Data Fabric is using an efficient mechanism based on the frequency and duration of the event alarms. Such way the fabric will keep to minimum the number of false alarms.

DATA FABRIC REQUIREMENTS

	x64	ARM64
Hardware	Intel/AMD, SSE4.2	Raspberry PI 3B+
CPU Cores	6	4
Memory	16GB	1GB
Storage	64GB	64GB
Connectivity	RS-232, RS-485, USB, RJ45, 802.11B/G/N	
Installation	Bare-Metal/Virtualization	MicroSDXC memory card

A number of built-in applications are provided as HTML5, Javascript. These are responsive based applications, for quickly changing content to stream continuously big volume of data using WebSocket protocol. Without complicating licensing models, or rights to use K_{500} is easy to obtain and operate. The price is set depending on the volume of data-sources being analyzed.
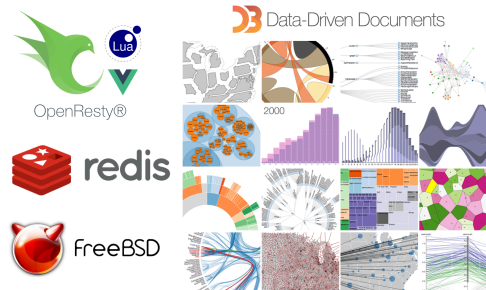
BEST DATA

Raw Data is fundamental to any data analysis process, from ICT to Weather and Environment. To really understand how how your world works you need to have the best data. From recorders to filters, we can capture the most needed metrics, filter out bad data and keep available and accessible, the original raw data, important for any analysis.

DATA RECORDING

FEATURES

CPU	x64, ARMv8 64bit only
Memory	32 MB RAM
Storage	128 MB, 750KB per day, per data source
Sample Rate	Default 60 seconds, configurable
Connectivity	RS-232, RS-485, RJ45, IEEE 802.11
Protocols	SERIAL, TCP, UDP, HTTP(S), MODBUS, SNMP, BLE, BACNET *
Operating Systems	Debian 7,8,9,10 RedHat Entreprise Linux 5,6,7 Raspbian 4 SUSE Entreprise Linux 11, 12 MacOS * FreeBSD 11, 12 Windows 10, 2008 R2, 2012 R2, 2016
Virtualization	KVM Xen, Citrix XenServer Solaris Containers Linux Containers FreeBSD Jails
Cloud Providers	Amazon Web Services Google Cloud Platform Azure Microsoft Digital Ocean IBM, Oracle, Rackspace
Deployment	Kronometrix IoT Gateway Binary package management system

OPERATING SYSTEM

- **sysrec** - Overall system performance
- **cuprec** - Per CPU data recorder
- **diskrec** - Per disk data recorder
- **nicrec** - Per NIC data recorder
- **hdwrec** - System inventory data recorder
- **procrec** - Process/Task data recorder
- **netrec** - TCP, UDP data recorder
- **faultrec** - Fault Management data recorder *

NETWORK MANAGEMENT

- **snmprec** - Ethernet and SAN Switch *

INTERNET SERVICES

- **certrec** - X.509 certificate recorder
- **direc** - Per directory recorder
- **svcrec** - IMAP, SMTP, POP3, HTTP, TCP(Any)
- **ntprec** - NTP server recorder
- **smtprec** - Sendmail SMTP server data recorder *
- **imaprec** - Dovecot IMAP/POP server data recorder *

MIDDLEWARE

- **httprec** - NGINX, Apache, Tomcat, PHP-FPM
- **dbrec** - MariaDB, MySQL, PostgreSQL *
- **jvmrec** - Java VM memory statistics
- **webrec** - HTTP response time analyser

INDUSTRIAL IoT

- **axisrec** - Network AXIS camera data recorder
- **bacrec** - BACnet data recorder *
- **blrec** - Bluetooth Low Energy data recorder *
- **rs485rec** - Industrial data recorder
- **wsrec** - Weather station recorder RS-232/USB

* Q2, 2021

DATA CORTEX

FEATURES

|	
RTC	NXP PCF2129 ARM64 only
Connectivity	RS-232, RS-485, USB, RJ45, 802.11B/G/N
Protocols	HTTP, HTTPS, WEBSOCKET
Summary Statistic Functions	Min, Max, Mean Last Count FrequencyCount Sum, SumSqrt Variance StandardDeviation Percentile
Data Filters	STALL RANGE COUNTER
REST API	HTTP based API Authentication Data Provisioning Summary Statistics Raw data Widgets Inventory and Information
Deployment	**ARM64 image** Raspberry PI 3B/3B+ **x64 image** Virtualization: ESX, Hyper-V, KVM, Xen Bare-metal server: Intel/AMD x64 **kronometrix.io** - Kronometrix SaaS

CORE FEATURES

- Multi-user system
- Multi-industry subscription based system
- Role-based access control system
- UTC time and date support
- Calendar support
- Smart Alarms: data source and device level
- Operator acknowledgement alarms
- Built-in operational availability, planned maintenance
- Per user threshold sets, export/import JSON
- System notification channel
- Data anomaly detector (BETA)
- Statistical chart analysis mode
- Chart analysis: Min, Max, Mean, Trend, Percentile
- Chart trend-line: linear, exponential, log, polynomial
- Multi-aggregate Data
- Workload Management system
- Exploratory raw data analysis
- Raw Data Repository
- Fabric Management and Observability
- Dark Mode
- Factory Reset

APPLICATIONS

- Default built-in applications
- Information Technology
- Environment, Air Quality
- Weather, General and Aviation Meteorology
- Support for 3rd parties applications
- Kronometrix Store *

* Q2, 2021
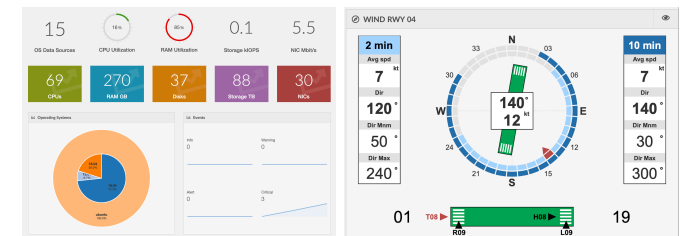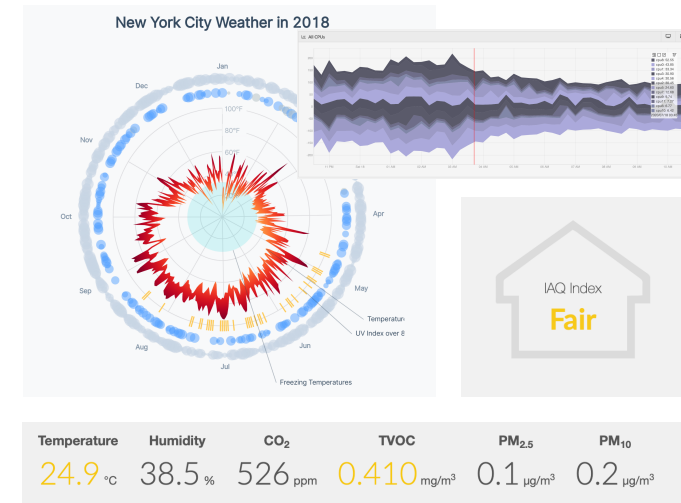
COMPATIBILITY LIST #1

Kronometrix Data Fabric supports a number of applications, devices and sensors from ICT enterprise to industrial IoT, weather and environment

VENDOR	MODEL	PROTOCOL	RECORDING	ANALYTICS
INFORMATION TECHNOLOGY				
Debian	8, 9	procfs	yes	yes
RedHat Entreprise Linux	5,6,7	procfs	yes	yes
FreeBSD	11,12	sysctl	yes	yes
Microsoft Windows	7,8,10, 2008 R2, 2012 R2, 2016	WMI	yes	yes
SUSE Entreprise Linux	11,12	procfs	yes	yes
Raspbian	4	procfs	yes	yes
CloudLinux	5,6,7	procfs, samfs	yes	yes
Citrix XenServer	7,8	xenrec	yes	no
FreeBSD Jails	11,12			
Apache HTTP Server	2,4		yes	yesy
NGINX HTTP Server	1.13, 1.15		yes	yes
Lighttpd HTTP Server	1,4			
Oracle MySQL	8		yes	yes
MariaDB	10		yes	yes
Redis	4,5		yes	yes
Oracle Java Virtual Machine	7,8,9	jstat	yes	yes

The term Data Source ("DS", "ds") means any system connected to a public or private network with a valid IPv4 or IPv6 address being a server, a data logger, a graphic workstation, an iPad or a sensor bound to a single Kronometrix data subscription.

COMPATIBILITY LIST #2

VENDOR	MODEL	PROTOCOL	RECORDING	ANALYTICS
NETWORK SECURITY CAMERAS				
Axis Communications	Q1615-E MkII	HTTP/HTTPS	yes	yes
Axis Communications	Q6052-E PTZ	HTTP/HTTPS	yes	yes
ENVIRONMENT / AIR QUALITY				
Tongdy Sensing Technology	IAQ-G01	Modbus-RTU	yes	yes
Tongdy Sensing Technology	MSD-1618	Modbus-RTU	yes	yes
Vaisala	GMW90	Modbus-RTU	yes	yes
Vaisala	AQT420	Modbus-ASCII	yes	yes
WEATHER				
Fine Offset Electronics	WH-1080	Serial	yes	yes
Vaisala	QML201C	HTTP	yes	yes
Vaisala	WXT520	Serial	yes	yes
Vaisala	HMP155	Serial	yes	yes
INDUSTRIAL AUTOMATION				
Phoenix Contact	QUINT-UPS 24	Modbus-RTU	yes	yes

The term Data Source ("DS", "ds") means any system connected to a public or private network with a valid IPv4 or IPv6 address being a server, a data logger, a graphic workstation, an iPad or a sensor bound to a single Kronometrix data subscription.