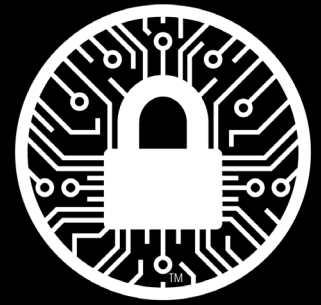# Eaton Cyber Secured Monitoring Cybersecurity – Q&A

An Eaton secure-by-design solution

Complies with rigorous cyber-security, process, requirements and testing standards

What is the role of the remote monitoring for a UPS?

A UPS is an equipment that works continuously **24/7, 365 days** per year to secure high quality electrical power to your critical load.

The criticality and complexity of such system necessitates regular maintenance to avoid unexpected downtime. Remote monitoring helps to **minimize any availability risk**, it is like having a **24/7 virtual Eaton specialist on site**.

Eaton Cyber Secured Monitoring service is a cloud-based analytics service for data center infrastructure to predict the failure of power components. The service adds predictive analytics, shifting power monitoring from a reactive to a proactive model.

What are the benefits of the remote monitoring in a UPS system?

The main benefits are:

- 24/7 expert remotely monitoring Eaton UPS devices.
- Integrated with Eaton field service technicians, technical support and monitoring analysts.
- Real-time visibility on-the-go with mobile and browser platform display of alarms and trends.
- 24/7 notification call and dispatch on critical alarms.
- Remote diagnostic for faster on-site repairs or validation of the warranty claim.
- High temperature critical alarms.
- Lost communication alerts.
- Intuitive reports - Monthly and on-demand summary reports.

All these benefits listed above help to **minimize the downtime risk associated with the critical components.**

Furthermore remote monitoring enables :

- **Time saving** – 24/7 specialisting monitoring your system with the capability to **remotely diagnose** any issue; to assess whether the issue can be fixed remotely on requires on-site assistance.
- **Detection of cyber-attacks.** A tentative cyber-attack may end up messing the voltages and current values of the system, so our experts can identify if the system is exposed to any attack.
- **Optimization of the budget for the installation** by showing the required interventions in the 12-month term.
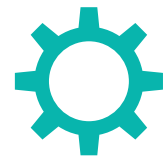
F·T·N

Powering Business Worldwide

up to 40%

First-time-fix rate thanks to
remote diagnostics

8 h

Potential reduction in downtime
thanks to anomaly detection

up to 50%

less travel for maintenance and
emergency calls (≈200 kg of
CO2 reduction over the lifetime
of a UPS)

How Eaton is guaranteing the cybersecurity of your devices with Eaton Cyber Secured Monitoring?

Eaton Cyber Secured Monitoring is using has Gateway Eaton Gigabit Card connectivity. The Gigabit network is **the first industry to receive UL 29001-1 and IEC 62443-4-2 certifications.** Those certifications are based on strong security criteria including **encryptions algorithms** (strong keys only are used).

Concerning the chosen IoT platform: the company has been a market leader in Europe over the last 20 years and it is yearly audited for the IEC certification. To pick up just few critical items for the cybersecurity.
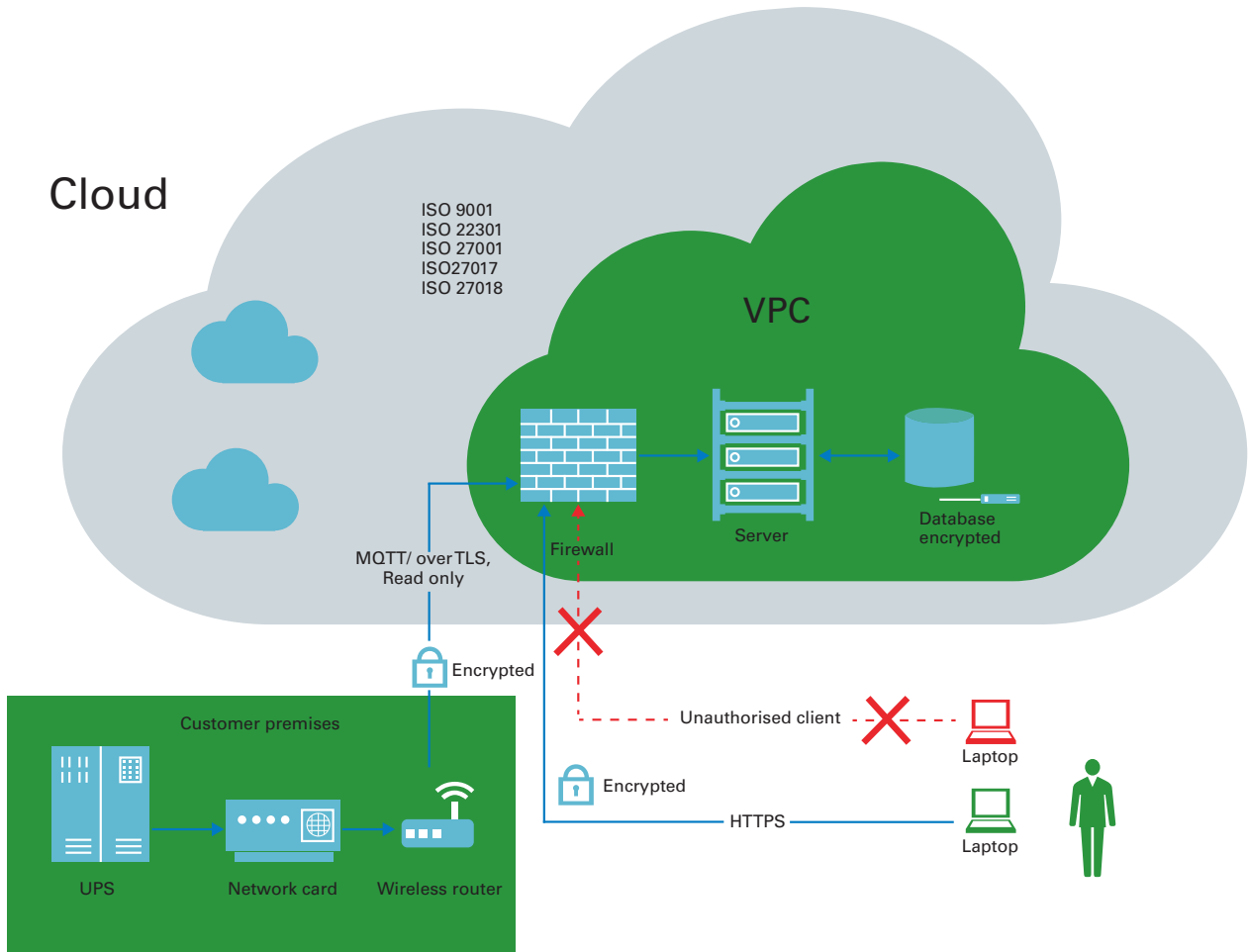
The cybersecurity is additionally guaranteed by:

- The device cannot be accessed from outside.
- **MQTT is implemented natively**: broker-based attacks are not possible. Our partner got A+ as rate for its encryption capability.
- **NO SQL database** means that query language is not allowed to make changes; database access decoupled and wrapped through own APIs. The web app firewall represents additional protection for the cloud application.
- The **authentication** refers to having at least two ways of identifying a user of the application.
- The company is often **independently audited** and **run penetration tests.**

What are the used protocols?

- **Using MQTT over Transport Layer Security (TLS)** is a cryptographic protocol that allows **secured** and **encrypted communication** at the transport layer between a UPS and Cloud server. On top of the provided transport layer encryption, TLS also ensures data confidentiality. All **cloud code is running inside a secure Virtual Private Cloud**, which cannot be accessed by third parties.
- Concerning the communication with the web (Cockpit, Dashboard) this runs on **HTTPS**.

Cloud

ISO 9001
ISO 22301
ISO 27001
ISO27017
ISO 27018

VPC

Firewall

Server

Database encrypted

MQTT/ over TLS, Read only

Encrypted

Customer premises

Unauthorised client

Laptop

Encrypted

HTTPS

Laptop

UPS

Network card

Wireless router

What is the secure-by-design approach?

Eaton has put in place a *corporate strategy* that translates into Secured development lifecycle that includes guideline and deliverables for **guaranteed safety and security doting Eaton product development.**

For example, at very early stage of the product its data flow is analyzed to identify any criticality. Any sensitive and personal data that can be identified through this process is checked to fulfilling the latest regulation on data protection (e.g. GDPR). Through this process Eaton identifies security requirements for all the products that have intelligence built into them. Security requirements are identified based on a wide different range of industry standards; these requirements collate into a single document internal to Eaton, provide a unify way of developing a product that is compliant with multiple security standards and therefore that can be sold in any part of the world.

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Did Eaton assess the cyber secured monitoring with the secure by design approach?

Yes, the Secure by design approach went through the entire solution assessment. The security assessment was run manually and not by automated scanning. On the other hand, there is no sensitive or personal data regularly transmitted, nor it is possible to make any setup from the cloud. Also, data transmission and storage follows the European or local regulation and it is encrypted.

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