

POSSIBILITIES OF IIOT APPLICATION PLATFORMS IN THE ELECTRICAL POWER SYSTEMS

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1. Introduction

- Information technology (IT) and Operational technology (OT) convergence
- Industrial Internet of Things (IIOT)
- Claroty IIoT platform
- The paper presents the overview of one modern solution with the Claroty IIoT platform. Claroty delivers comprehensive and reduces the complexity of OT security.

2. Information technology (IT)

- IT refers to the application of network, storage, and compute resources towards the generation, management, storage, and delivery of data throughout and between organizations

3. Operational technology (OT)

- OT refers to technology that monitors and controls specific devices and processes within industrial workflows.
- IT/OT convergence is the integration of information technology (IT) systems used for data-centric computing with operational technology (OT) systems used to monitor events, processes and devices and make adjustments in enterprise and industrial operations.

	Information Technologies (IT)	Operational Technologies (OT)
Function	It refers to telecommunications equipment. Information Technology focuses on the storage, recovery, transmission, manipulation and protection of data	OT is more oriented to the control of processes or their change through the monitoring and control of devices
Use, area	Business-oriented	Industrial-oriented
Access	Connected with the outside world	Very restricted access. Limited to people with certain privileges
Assets Vs workers	The number of assets is usually equal (or close) to the number of professionals	More autonomous More devices than professionals
Frequency change	Constantly changing: new employees joining the company (=new devices connected) and former employees leaving the company (=devices that are disconnected)	Less changing environment (there may be no changes for months to years)
Environment	Controlled, stable and constant	OTs endure adverse weather conditions (extreme temperatures or humidity levels, among others)

	Information Technologies (IT)	Operational Technologies (OT)
Interface and Network	Web browser, keyboard, device	Sensors, coded or touch screens
Main priority	Data security (usually confidential data)	Uptime, the availability and integrity of the legacy and no longer system devices is essential
Updates	Constant due to software updates Service interruptions are tolerable and, in some cases, programmable outside of working hours	Updates must be tested carefully in advance and, usually involve restarting or stopping the machines Consequently legacy systems are very frequent
Life cycle	Shorter life cycles (3-5 years)	OT systems have longer life cycles (15-20 years) As a result, legacy systems and no longer supported ones are frequent
Processing requirements	Minutes-days	Milliseconds-Seconds
Objective	Logical security (no lives at risk) The objective is to protect confidential information from any potential risk (human error, natural disasters, cyberattacks, etc.)	The objective is to protect the environment, people and infrastructures
Operating System	Standard operating systems	Specific purpose equipment with proprietary Operating Systems (Custom-developed software)

4. Industrial Internet of Things (IIOT)

- IIoT platforms are specialized IoT platforms for industrial environments.
- For the development of IIoT platforms used in electrical power systems, as well as for the development of any IoT platforms, it is necessary to consider the IoT devices to be used, communication components that will provide connectivity within the platform, services to perform, ways to manage platform functionality, security aspects of platforms and application components that allow end users to monitor, use functionality, and manage platforms.

5. Claroty IIoT platform

The Claroty Platform comprises :

- Continuous Threat Detection (CTD);
- Enterprise Management Console (EMC);
- Secure Remote Access (SRA).

5. Claroty IIoT platform

Continuous Threat Detection (CTD):

- Automatically discovers & manages all assets to deliver full OT visibility
- Detects known & Zero-Day threats in real time
- Continually monitors for full-match vulnerabilities
- Provides AI-driven network zoning & segmentation

Secure Remote Access (SRA):

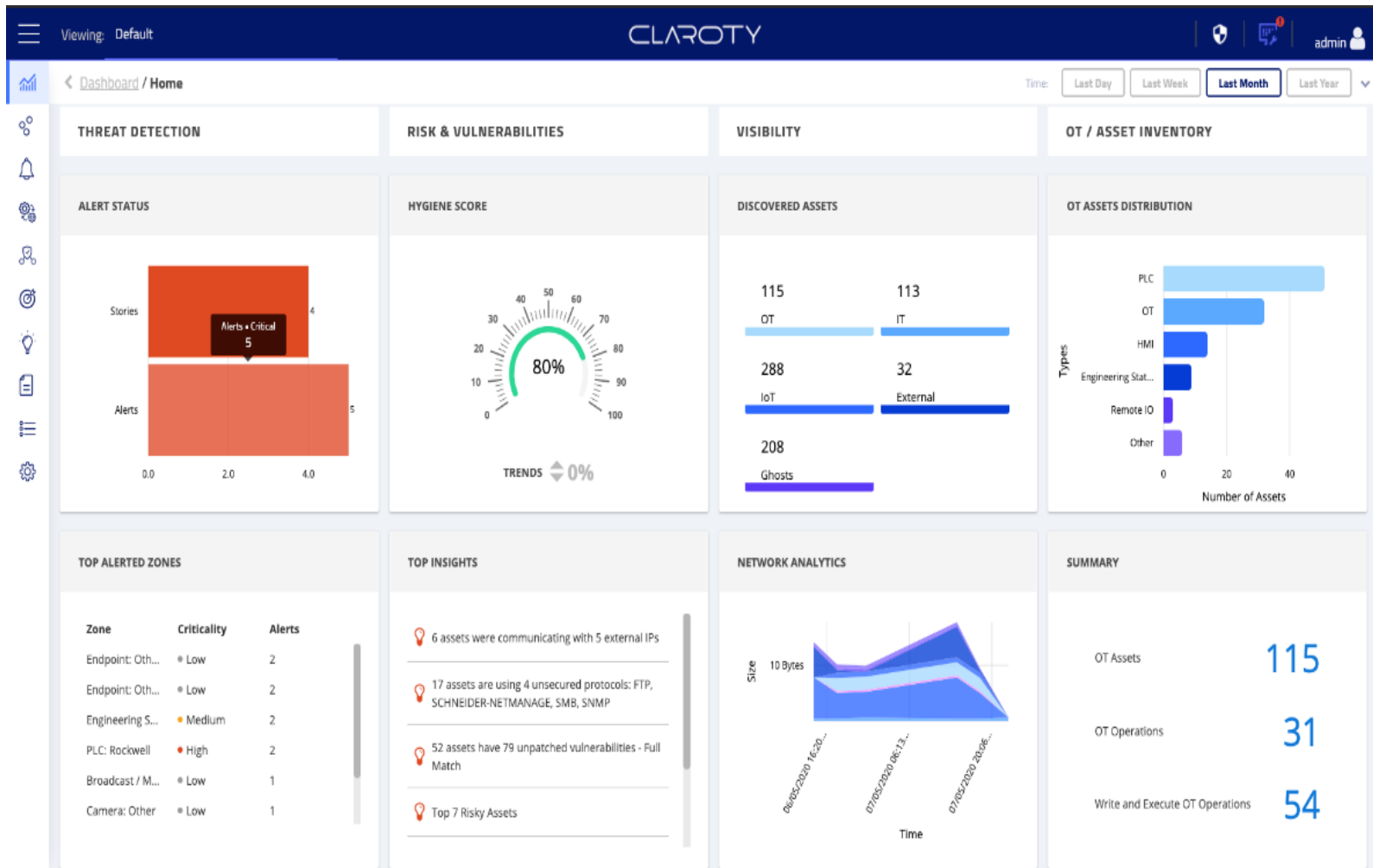
- Secures, controls, & streamlines OT remote access
- Minimizes risk introduced by remote & third-party users
- Enforces IT/OT security best practices
- Enables ongoing auditing for maintenance & compliance

Enterprise Management Console (EMC):

- Deploys rapidly & safely with zero risk of downtime
- Delivers a unified IT-OT view designed for the SOC
- Consolidates alerts & risk analysis across sites
- Integrates seamlessly with IT security infrastructure

A Complete OT Security Solution

5. Claroty IIoT platform



6. Conclusion

- With the advanced and cutting-edge technologies, the electric power industry has more options to control, monitor, analyze and utilize the collected data, in order to create intelligent decisions automatic. Through intelligence concept the IIoT allows this industry to evolve and to make its functions more efficient.
- Claroty is supposed as high-quality commercial IIoT platform. One of the main advantages of the Claroty platform is that it provides visibility into all three risk variables in OT environments: asset visibility, network visibility and process visibility.

THANK YOU FOR YOUR
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