CUSTOMER CASE STUDY
Sponsored by: NTT DATA in partnership with Claroty

Protecting medical devices is a challenge due to the inherent complexity of different equipment and the need to establish a unique and integrated view of the technology environment. This was the path that Hospital Sírio-Libanês took to transform the management of its technology industry.

Rethinking security and productivity in the hospital environment to provide better experiences for patients and employees

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I. Introduction

Sírio-Libanês is one of the most renowned healthcare institutions in Brazil, recognized for its excellence in medical care and technological innovation. Such excellence is the result of 100 years of experience, and from the hospital's inauguration in 1965, a high-technology structure with specialized teams, investment in teaching and research, and various pioneering and innovation initiatives strengthened the institution each year toward better diagnosis, treatment, health promotion, and quality of life.

However, dealing with the growing complexity of connected medical devices, especially in the information age we live in, presents an important challenge for both the clinical staff and the IT team of the institution. Motivated by the desire to ensure visibility and control of the technology infrastructure, as well as by the need to guarantee the security of patient and employee data, Hospital Sírio-Libanês decided to seek a robust solution that could address the specific characteristics of its environment.

Leandro Ribeiro, Information Security Manager at Hospital Sírio-Libanês, took responsibility for leading the institution's journey toward implementing a cybersecurity solution for medical devices. His track record in the healthcare sector already provided some ideas on how to evolve, but it was with NTT DATA's approach that the path became clear. NTT DATA presented Claroty and its xDome for Healthcare solution, a modular solution provided in the SaaS model capable of integrating the IoMT (Internet of Medical Things) technological footprint with the security and observability resources existing in the organization.

SOLUTION SNAPSHOT

ORGANIZATION:
Hospital Sírio-Libanês

ORGANIZATIONAL CHALLENGE:
Expand visibility and security of medical devices

SOLUTION:
The Claroty xDome for Healthcare platform was implemented with support from Claroty and NTT DATA

PROJECT DURATION:
The implementation took five months, from technical discussions, proof of concept, and commercial negotiation, to implementation

CONTRACTING TERMS:
The chosen option is CAPEX, in a contract established for a period of 5 years

KEY BENEFITS:

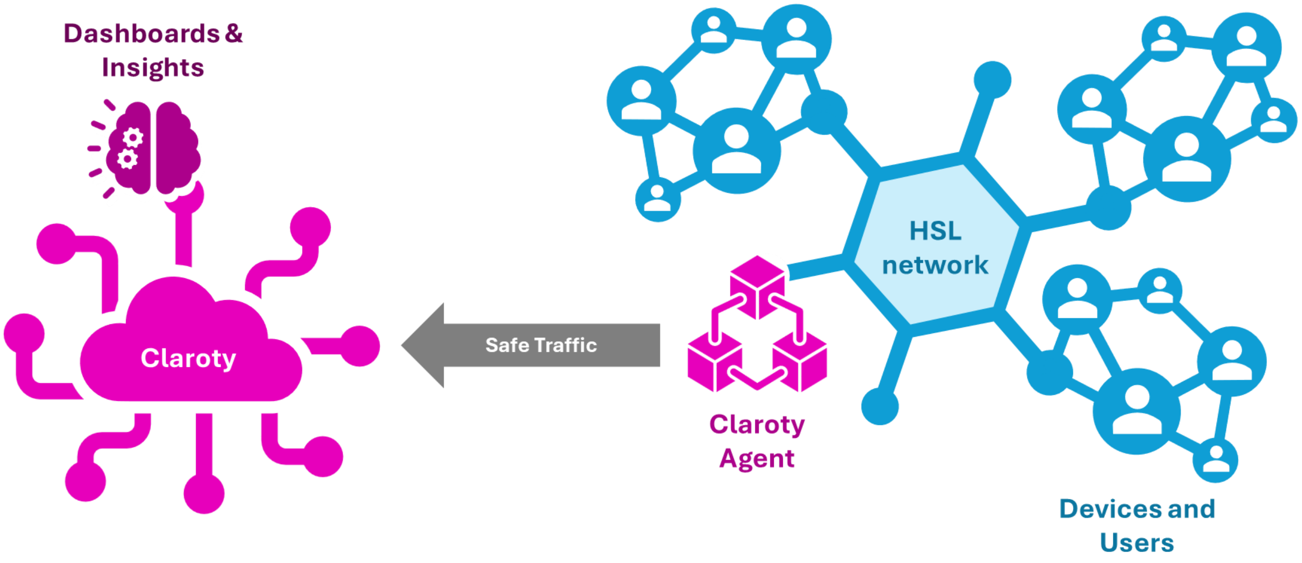
- » Integration of more than 2,500 medical devices
- » Real-time visibility of vulnerabilities and threats
- » Optimization of medical equipment usage and reduction of idle time

II. Implementation

In initial discussions between HSL, NTT DATA, and Claroty, it became clear that the main objective of the project should be the protection of medical devices with the identification of threats and the creation of an inventory with realistic information and visibility of the IoMT base vulnerabilities.

The implementation was facilitated by collaboration with NTT DATA and Claroty, which proposed an evaluation period and proof of concept to demonstrate the effectiveness of the xDome for Healthcare platform. Thus, they deployed equipment on the HSL network – a collector agent – for data collection and enabled its discovery and monitoring capabilities. With this, the agent was able to capture the necessary information and synchronize it in real-time with Claroty's cloud, feeding dashboards and intelligent algorithms that provide visibility and insights about the environment.

FIGURE 1: ***Representation of the Solution Architecture***



Graphical representation without technical accuracy. For reference only.

Source: Hospital Sírio-Libanês

Even with an extensive industry of connected medical devices, which has approximately 2,500 equipment from different manufacturers and characteristics, it took only 15 days for the solution to provide valuable information to identify threats, without the need for direct intervention in the devices.

Given the success of this initial stage, the conversation quickly evolved to also encompass the business perspective from the lens of operational efficiency. Unlike other solutions that focus only on IT (referring to information technology elements) and OT (which covers operational technology devices, such as machines, sensors, actuators, among others), the Claroty xDome for Healthcare platform stood out for its efficiency and specialization in the medical world. The solution not only was able to meet cybersecurity needs, but also helped identify opportunities to optimize equipment usage, generating more profitability and providing essential information for device maintenance and operation.

"Understanding peak hours and idle times of medical devices, it is possible to better plan movements and maintenance, in addition to allowing the planning of a better route for patient care, improving their experience during exams and procedures", explained Leandro Ribeiro, Information Security Manager at Hospital Sírio-Libanês. The intelligence brought by the platform also creates pathways to enhance the knowledge and experience of healthcare professionals working at HSL. "If the average time for a particular exam is 5 minutes and a professional takes 20 minutes to perform it, it may be necessary to review their training or improve their technique in that procedure", he adds.

Challenges

During the implementation of the Claroty solution at Hospital Sírio-Libanês, some technological and organizational challenges were faced and overcome. On the technology side, ensuring the interoperability of the new solution with existing devices, systems, and security platforms was the central point. The need was to ensure that information collection and data integration into Claroty's cloud functioned without interruptions in medical devices, which required a careful approach and close collaboration between HSL, NTT DATA and Claroty.

Organizationally, the implementation also faced challenges related to awareness and understanding by different hospital areas about the importance of cybersecurity for medical devices. While IT and security teams were familiar with the need for such solutions, the diagnostics, clinical engineering, and executive areas needed to be better informed about the specificity and importance of IoMT protection. The analogy used by Leandro, comparing the diversity of medical exams with the diversity of security solutions, was crucial to facilitate this understanding and obtain the necessary support from stakeholders.

"A blood test looks at one thing, an MRI looks at another, each in its own way. The same thing happens with solutions for protecting IT and IoMT.", reflected Leandro Ribeiro, Information Security Manager at Hospital Sírio-Libanês. In Leandro's view, bringing knowledge about information security to different areas and levels of the organization allowed him to sensitize other decision-makers about the project in a compelling way.

III. Benefits

The implementation of the Claroty solution brought several benefits to Hospital Sírio-Libanês. The protection of approximately 2,500 connected medical devices, including among other elements MRI machines, cardiac monitors, and ECGs, was significantly improved.

New devices will be automatically incorporated into the new controls, which ensures a consistent level of protection and drastically reduces the need for manual interventions. Even SuperLab, a clinical analysis laboratory launched in 2024 that receives, processes, and generates the results of all laboratory tests performed at Hospital Sírio-Libanês, is already monitored and protected by the platform.

The visibility provided by the xDome for Healthcare platform is also essential for implementing automatic vulnerability remediation processes, integrating with existing security and network products in HSL's IT industry. This integration, which, according to Leandro Ribeiro, Information Security Manager at Hospital Sírio-Libanês, is a unique feature of the Claroty platform, will enable a more agile response to security events, ensuring continuous protection of medical devices and minimizing any downtime.

Furthermore, the solution enabled improved equipment management, optimizing its utilization and maintenance. By reducing idle time, optimizing schedules for healthcare professionals and patients, and ensuring greater availability of services and examinations, the project in partnership with NTT DATA and Claroty resulted in greater profitability and operational efficiency. This became clear to all project stakeholders, who now systematically monitor these metrics.

Other metrics and affected aspects are:

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>
> - Leandro Ribeiro, Information Security Manager at HSL

- Elimination of high and critical level security risks, directly affecting 31% of the device base monitored by the platform;
- 50% reduction in time to locate connected equipment in the hospital through the use of the solution's connectivity matrix;
- Updated inventory of connected devices in near real-time, eliminating manual processes that could take days to reflect changes in the environment.

TABLE 1: ***Main Project Indicators – Hospital Sírio-Libanês, NTT DATA and Claroty***

	Before the Project	**After the Project**
High or Critical Level Security Risks	Present – Difficulty in mapping and action	Mitigated – Visibility and prioritization of action on the platform
Location of Connected Equipment	Manual processes and difficulty in mapping; compromised visibility	Centralized and automated process by the platform; full visibility
Inventory of Connected Devices	Manual, time-consuming and disconnected processes	Automatic process practically in real-time; detection by the platform

Source: Hospital Sírio-Libanês

In summary, the positive impact extended to the employees and patients of Hospital Sírio-Libanês, who now have a safer and more efficient environment.

IV. Next Steps

Hospital Sírio-Libanês plans to continue improving its internal processes and standards to maximize the benefits of the Claroty solution. One of the key points is greater internal collaboration with the clinical engineering area, responsible for the acquisition and provisioning of connected medical devices. This involves defining processes and SLAs for corrections to equipment that may involve the respective manufacturers – which also implies expanding the support of these providers throughout the device lifecycle.

Among the next steps are also:

- Development of internal playbooks that define and standardize controls and procedures;
- Planning for a detailed equipment inventory in addition to the digital inventory;
- Definition of standards and practices for secure access, also contemplating third parties such as service providers or maintenance teams from manufacturers of solutions and medical devices that still access via VPN.

The institution also intends to further explore the capabilities of NTT and Claroty to optimize identified operational efficiencies. With a five-year contract for the protection of all devices, Hospital Sírio-Libanês is committed to maintaining the security and efficiency of its medical equipment, ensuring excellent care for its patients.

V. Methodology

The information about the project and the institution contained in this document was obtained through interviews with the people involved in its execution, both from NTT DATA and Claroty, as well as from Hospital Sírio-Libanês. The stages, challenges, results and plans represent a synthesis of the topics addressed. The future actions described may change according to the interests of the parties and other technical or business objectives.

About the Analyst

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Luciano Ramos is Country Manager at IDC Brazil and leader of the Software and Services domains at IDC Latin America. The studies conducted by Mr. Ramos and his team provide IDC clients with detailed insights on market sizing, competitive analysis and forecasts related to Software, Cloud and Services and how these technologies interact to enable and transform businesses.

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