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How to improve the security of personal and confidential data using Attribute-Based Access Control (ABAC)

Case Study of NextLabs Zero-Trust Data-Centric Security Software

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Petróleo Brasileiro S.A., commonly referred to by its acronym Petrobras, is a Brazilian multinational corporation headquartered in Rio de Janeiro, Brazil. Petrobras is a publicly-held corporation that operates in an integrated and specialized manner in the oil, natural gas, and energy industry. The corporation is one of the largest producers of oil and gas in the world and is primarily engaged in exploration and production, refining, energy generation, and trading. Petrobras has expertise in deepwater and ultra-deepwater exploration and production as a result of nearly 50 years of development of the Brazilian offshore basins, making it the world leader in this segment.
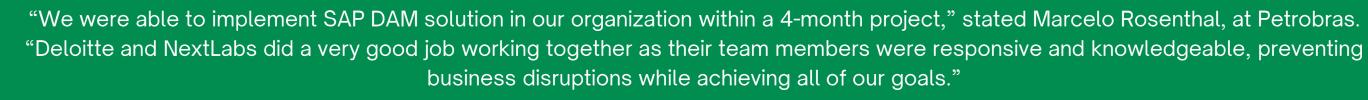

Ensuring access to business-critical data on a need-to-know basis is a crucial aspect for companies to ensure their information is protected from data loss. For Petrobras, their need to improve the security of their confidential data and personal data was overcome through NextLabs' solutions which used attribute-based access control (ABAC) and dynamic authorization technology. This dynamic approach not only addressed Petrobras' need to remain in compliance and maintain agility with the advancement of new regulations for the protection of personal data and business-critical data; the approach also helped automate role provisioning, strengthen SAP security profiles, as well as improving data management and access control.

As part of its digital transformation strategy, Petrobras started the *#trans4mar Project* in 2019. The objective was to convert its SAP ERP from ECC to S/4HANA, along with the review and improvement of some selected business processes. Petrobras IT with the support of Deloitte and NextLabs resources, worked in tight collaboration to implement the primary deliverable of NextLabs SAP DAM within four months to quickly deploy and meet the data governance-initiatives set forth. With this zero-trust data-centric approach using SAP DAM, Petrobras is now able to ensure fine-grained access control for applications that create, store, or modify personal data. To further protect privacy, data is dynamically masked on transaction fields where personal data is present. This is taken one step further, by also dynamically segregating data for reports, ensuring that personally identifiable information (PII) and business-critical data are protected, helping maintain data privacy.

"We were able to implement SAP DAM solution in our organization within a 4-month project," stated Marcelo Rosenthal, at Petrobras. "Deloitte and NextLabs did a very good job working together as their team members were responsive and knowledgeable, preventing business disruptions while achieving all of our goals."

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Rio de Janeiro, Brazil

Industry
Oil and Gas Production

Products and Services
Oil and gas exploration, production, refining, energy generation and trading

Employees
38,957

Revenues
$118.3 billion (USD)

Solution
NextLabs Dynamic Authorization and Entitlement Management

Before: Challenges and Opportunities
- Need to protect vendor and partner data, coupled with group masking of PII for accounting, posed obstacles for LGPD compliance.
- Role assignment is also a challenge, as it is a tedious and complex process, making it difficult to manage since it requires a manual multi-person process to assign roles by one, where a second person is needed to approve the assigned roles.
- As part of the company-wide data governance initiative, Petrobras needs to secure confidential data from unauthorized users to avoid data breach and leakage of business-critical data.
- Seeking right technology to increase automation and agility as Petrobras advancing toward a 21st century enterprise.

Why NextLabs?
- Out-of-the-box support for leading enterprise and cloud applications including SAP ECC, SAP S/4HANA, SAP BW, and SAP HANA.
- Expertise in ERP, big data application and experience implementing large scale data governance, risk, and compliance solution.
- NextLabs solutions support data masking, and dynamic authorization of business transactions allowing for regulatory compliance.
- NextLabs helps enterprises streamline role management through automation using policies.
- Working together with Deloitte, solutions can be implemented within a matter of weeks and are easy to maintain, allowing Petrobras to meet an aggressive project timeline without compromising security coverage and total cost of ownership.

After: Value Driven Results
- Achieved requirement of masking sensitive information to achieve LGPD compliance using NextLabs data-centric security solution to prevent unauthorized access to PII data.
- Implemented role automation, allowing roles to be realized faster, and role management to be streamlined. Authorization and access rights are granted dynamically in real-time via ABAC, preventing role explosion.
- Ensured business continuity by meeting an aggressive deadline to deliver a data masking and role automation solution.
- Rapid time to value, offering enterprises the ability to keep up with the evolving data security needs.
- Gained a dynamic authorization technology with fine-grained access control capabilities to increase automation and agility.

NEXTLABS

Compliance
Improve security & streamline compliance to LGPD and SOX regulations

Right Technology
Scale business operations rapidly

Quick Deployment
100% completion of scope within aggressive timeline

Automation
Quickly adapt to new business requirements, simplify change, & escalation management

How Petrobras, Deloitte, and NextLabs Achieved the Result Together

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Petrobras IT with the support of Deloitte and NextLabs resources, worked in tight collaboration implementing the NextLabs solution rapidly to meet Petrobras' business objectives. With the NextLabs solution in place, Petrobras can prevent data breaches and wrongful disclosure of sensitive data by restricting access of the proprietary data only to the authorized users, tracking and logging all data access requests, while allowing users to conduct business operations without interruption by masking and filtering out the unauthorized data elements in real time. By automating safeguarding of data, Petrobras is able to eliminate many manual tasks, streamline compliance requirements including LGPD, and automate role provisioning to strengthen SAP security.

Lessons Learned

- It is important to define a Business Case, mapping what do you want to achieve and with the proper NextLabs solution.
- Spent time mapping user attributes in order to achieve best results aiming Dynamic Access Management.
- Define a detailed Cutover Plan when converting the solution from ECC to S/4HANA.

Project Roadmap

0. Create a Business Case
May 2021
- Evaluate business scenarios and potential improvements with the solution (including payback of the investment)
- Conduct a POC with NextLabs

1. Define the project Scope
July 2021
- Identity priorities analyzing legal and business needs
- Define the goals and the first functionalities to be implemented
- Create a Workplan aligned with Business Strategy

2. Implementation
August – December 2021
- Map the user attributes
- Define what transactions, tables/fields should be masked (LGPD requirements)
- Implement ABAP enhancements
- Create Policies in the Control Center
- Testing and validation of key users.

3. Go Live SAP ECC Environment
December 2021

Go Live

4. Converting to S/4
June – July 2022
- Converting policies and ABAP codes created in ECC to S/4
- Provide Systems integrations with the new environment
- Testing and validation of key users.

5. Go Live S/4 (conversion)
August 2022

Go Live S/4

**6. SAP DAM Phase II:
Role Automatic Provisioning**
November 2022
- Development of automatic provisioning of roles based on attributes

Next Steps

**7. SAP DAM Phase III:
New Integrations & More automation**
2023
- Implement Data Masking for BW and other environments
- Extend provisioning of roles based on attributes

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