pathlock

SOLUTION SHEET

SAP S/4HANA Migration: Automated Role Redesign

Design, test, and deploy SAP roles faster

Overview

SAP's role-based access model makes designing and maintaining user roles critical to application security and compliance. With the inevitable migration to S/4HANA on the horizon, a role assessment and redesign project will enable businesses to identify and mitigate major security and compliance risks. But the complexity and volume of SAP user roles make role redesign projects long and often unsuccessful.

Manually collecting transaction data, building new roles, and testing them for errors, even for a single department, can take several months. With automation, the time and costs incurred to collect data, design roles, and test them are significantly reduced. By eliminating complex and tedious work, errors are also dramatically reduced, making the quality and longevity of roles greater and the cost to maintain them lower.

The Challenge

SAP roles build up over a period of many years, with their creation and design primarily motivated by business needs. However, in the interest of maintaining business continuity and clearing an ever-growing number of access requests by business owners, roles give way to dynamic organizational needs while security and compliance take a back seat.

Eventually, companies end up with thousands of roles, many of which have degraded or are overprovisioned, causing greater security and compliance risks within SAP applications. This makes role audits and redesigns a highly recommended security exercise.

Migrating to S/4HANA presents an opportunity to clean up SAP roles and move into a new environment that is more secure and meets current-day compliance regulations. However, role redesign projects are typically avoided or postponed by most SAP customers due to the sheer volume of time, effort, and cost that goes into executing them successfully. Some of the biggest roadblocks to role redesign include:

Building New Roles

Extracting role information and the related transaction usage data from SAP for thousands of users can be tedious. The usage of roles needs to be verified individually with business users to determine the roles and transactions that are used in practice and those that are redundant.

The manually collected transaction usage data is usually not 100% accurate. Hence, the new roles created using the collected data are prone to authorization errors. This results in significant time spent on testing and modifying the new roles until they meet the required functional and security standards.

Testing the Roles

When new roles are created, they need to be tested by QA teams before moving them into production, which is highly time-consuming. Moreover, QA may not understand the full scope of transactions that each role should provide. Real testing can happen only in a production environment.

To ensure proper role function, business users need to be involved in functional testing, which infringes on their time and productivity. When new roles run into transaction errors in production, they need to be modified, and the testing cycle must be repeated. Without a thorough testing process, errors could occur in production, directly affecting operations and business continuity.

Harmonizing T-Codes

S/4HANA has several completely new transaction codes. Some have been modified, some have a different nomenclature, and others may be obsolete in the new application environment. Migrating roles to S/4HANA will require mapping existing transaction codes to the new ones.

This will also mean redesigning roles to ensure that they enable the execution of transactions per current business processes. The t-code mapping has to be done manually for all the affected transactions and their respective roles. Any error in the t-code configuration will directly impact the business.

Pathlock Solution

Pathlock automates the design of SAP roles by analyzing a user's existing authorizations, historical usage patterns, job function groupings, as well as segregation of duties (SoD) rules, and sensitive access concerns. The solution ensures roles adhere to defined naming conventions, are adequately reviewed, and are properly documented.

Automated Role Usage Analysis: Pathlock analyzes historical transaction data to provide transaction usage information for each role. This allows security teams to get the information they need on transactions that are actually used without having to go to business owners, saving a significant amount of time in gathering usage data. The business owners can then look into the usage data to make informed decisions about how the new roles should be designed.

SoD Analysis: The Pathlock solution allows security teams to perform SoD analysis to identify role conflicts within existing roles. This enables security teams and business owners to either eliminate these conflicts in the new roles or implement compensating controls to meet compliance and audit requirements. Consequently, no unknown nor unapproved risks will be present in the role design.

Automatic T-code Mapping: To simplify the transition from the current t-codes to the new t-codes added to S/4HANA, Pathlock identifies and highlights all transactions impacted by the upgrade. The new roles are automatically updated with the corresponding new t-codes, eliminating complexity and human errors that would have occurred during a manual upgrade.

Role Simulation: The solution allows security teams to create new roles virtually and test these roles programmatically for transaction errors. This significantly reduces the dev-to-production lead time and helps eliminate any major authorization errors before the new roles are deployed in the production environment.

Zero-Risk Production Testing: Regardless of how vigorously roles are tested, the complex nature of SAP applications will invariably cause errors in production. Pathlock allows security teams to assign new roles to users in parallel to their current roles. For example, suppose the new roles encounter an authorization error. In that case, the information is logged, and users are automatically granted their previous role privileges, ensuring there is zero impact on the business. Security teams can then use the error information to fine-tune the new roles to match user needs.

Integrated Approval Workflows: For enhanced compliance, Pathlock provides a request-approval workflow and persists audit-relevant data associated with all role changes. SoD conflicts and sensitive access concerns are automatically documented, so designers, approvers, and auditors can quickly determine risks associated with any request. Also, comments, as well as role amendments or change requirements, can be made at any point in the workflow, thereby ensuring efficient collaboration and the creation of a detailed audit trail.

Summary Benefits

Migration to S/4HANA is a long and often challenging process that requires preparation on multiple fronts. Having lean roles that comply with sensitive access policies, follow the principle of least privilege, and satisfy the access requirements of end users will ensure better security when you make the transition. Simply put, when there are fewer security concerns at the role level, there are fewer concerns at the user level.

Pathlock enables this by automating a large portion of the role design and testing process, allowing security teams to complete the role redesign project significantly faster, saving both time and costs. In addition, the solution provides business owners and security teams with the information they need to quickly make decisions on their role requirements and a virtual environment to test the new roles before deployment.

Furthermore, the roles can be tested and improved upon while in production without risking any impact on business continuity. Lastly, with a well-documented approval workflow in place, audit teams can pull out evidentiary data to support role changes at a given time.

About Pathlock

The Pathlock platform protects over 140 enterprise business applications and the critical transactions they power. Our application governance solutions help companies enforce GRC controls and take action to prevent loss. Enterprises can manage all aspects of application governance in a single platform, including user provisioning and temporary elevation, ongoing user access reviews, control testing, transaction monitoring, and audit preparation.

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