

Access Control 5.3

Implementation Considerations for Enterprise Role Management



Applies to:

SAP Access Control 5.3

Summary

SAP Access Control identifies and prevents access and authorization risks in cross-enterprise IT systems to prevent fraud and reduce the cost of continuous compliance and control. This document provides a quick reference guide to understand the main features, business benefits, and implementation best practices of the Access Control 5.3 capability for enterprise role management.

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Typographic Conventions

Type Style	Description
<i>Example Text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
Example text	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

Icons

Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

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1. Main Features

SAP Access Control's Enterprise Role Management capability allows organizations to more effectively manage their security roles across the enterprise. The features listed here highlight key functionality provided for managing roles in SAP ERP, non-SAP ERP, and other proprietary applications.

- Documentation
 - Definition of role attributes to document the role.
 - Centralized on-line documentation provides the ability to keep role authorization details current.
 - Approval comments with date and time stamps for each role.
 - Role comparison ensures role definitions and role authorization details are synchronized with the SAP systems. Provides an auditing tool to show any discrepancies. Available for SAP ABAP roles.
 - Attachment of supporting documents.
- Preventative risk analysis through integration with Risk Analysis and Remediation
 - Performing risk analysis during role design and prior to creating a role.
- Approval workflow and role generation
 - Workflow definition for role approval.
 - Automated role generation into SAP ABAP environment. (Available for SAP ABAP systems only)
- Audit Trails and Reporting
 - Tracking progress during role implementation.
 - Monitoring the overall quality of the implementation.
 - Providing an audit trail for all role modifications.
- Integration with Compliant User Provisioning
 - Role source for user provisioning and user access review

2. Key Benefits

Access Control's Enterprise Role Management capability enables simplification of the role management process across an organization.

- Provides a single enterprise role repository for role design, testing, and maintenance to enforce consistency and standardization.
- Provides role source integration with Compliant User Provisioning.**

- Facilitates the role design process with a pre-defined (yet customizable) design methodology and workflow.
- Supports the definition and documentation of role information, authorizations, and testing results.
- Enforces the Segregation of Duty analysis* during role design to prevent risks from entering application systems.
- Provides change history for auditing and compliance.
- Provides workflow approval** for control checking and evaluation during role design.
- Provides automatic SAP role generation (for SAP ABAP target systems only).

* *requires integration with Risk Analysis and Remediation*

** *requires integration with Compliant User Provisioning*

3. Key Stakeholders

Enterprise Role Management focuses on four key audiences:

- **Role Design Team:** Business Process and Role Owners define what access a given type of user requires to do his or her job.
- **Role Approvers:** If Compliant User Provisioning is integrated, Business Process Owners are able to validate and approve a new or modified role.
- **Enterprise Role Management Administrator:** Further define and document role authorization objects and, for SAP R/3 ABAP systems, generate the approved roles based on pre-defined authorizations synch with R/3.
- **Auditors:** Detailed reports and audit trail simplify the verification of corporate governance.

4. Implementation Preparation

Preparing for implementation includes the following steps.

4.1 Define and assess current role management processes.

- Determine the strengths and weaknesses in your current role management process:
 - How do you currently design roles?
 - How do you document and store documentation of roles?
 - How often do you change your roles?
 - How time consuming is the role management process?
 - What is your organization's current remediation status?

- What is your organization's current process to meet compliance initiatives regarding role design and business owner approval?
- How much time is spent responding to audit requests – internal and external?
- Gain knowledge of the Enterprise Role Management key features to leverage the application functionality to develop or strengthen your process:
 - Determine how Enterprise Role Management can compliment role creation and generation (for SAP ABAP – PFCG functionality) and reduce manual effort and disjointed audit trails.
 - Determine the level of documentation required for your roles.
 - Begin with a simple process first, then build upon it.
- Determine the project goal and scope. List specific goals for your organization:
 - Optimize or consolidate roles to minimize duplication of roles.
 - Reduce unused actions (for SAP ABAP – transaction codes) in roles.
 - Reduce or remove SOD risk.
 - Reduce role change requests by x%.
 - Increase business user involvement, awareness, and ownership of compliance issues.
 - Reduce the complexity of role maintenance.
 - Increase visibility of audit trails for role change and approval.
- Determine role management methodology:
 - Determine key stakeholders.
 - Determine role management scope and consider role methodology for each type of roles – SAP ABAP roles, SAP non-ABAP roles, non SAP roles, etc.
 - Determine role attributes such as business process, sub process, and functional area. Enterprise Role Management makes it easy to define role attributes and map roles to them. Because of this, the following tips may be helpful.
 - The thought process is more important than the mechanics of Role Design.
 - Carefully define your role attributes before you use Enterprise Role Management to ensure integration with Compliant User Provisioning within the Access Control suite.
 - 💡 Note: Role attributes, such as business process, sub process, and functional area, have to match between the two capabilities to use Enterprise Role Management as the role source for Compliant User Provisioning.
 - Involve the business team (Business Process Owners and others) in the design process early and often.
 - Continually look for opportunities to rethink, clarify, and improve business efficiencies.
 - Determine role-naming convention – create naming conventions that automatically suggest role and profile naming standards during the role creation process. Consistent naming conventions are critical to maintain your organization's roles.

- Determine system landscape – the target systems for role generation and risk analysis do not have to be the same. For the risk analysis target system, a Production system or a QA system with quality data (Production-like or fresh copy of Production) is recommended. For the role generation target system, a Test or Development system is recommended – depending upon the project phase.
- Determine approval process – The approval process allows documented collaboration among different stakeholders involved in the role management process. To ensure success, involve the business process owners early and often to generate support and buy-in for the process.
- Determine role testing and documentation procedures – document testing details or upload testing documents.

4.2 Phased approach for quick wins and reduction of change management risks

- Phase 1 – Role documentation only (including conversion from existing documentation)
- Phase 2 – Pilot implementation with full functionality to a small user group
- Phase 3 – Roll out to additional groups to complete the project scope
- Phase 4 – Additional roll outs as needed

4.3 Provide appropriate and just-in-time user training

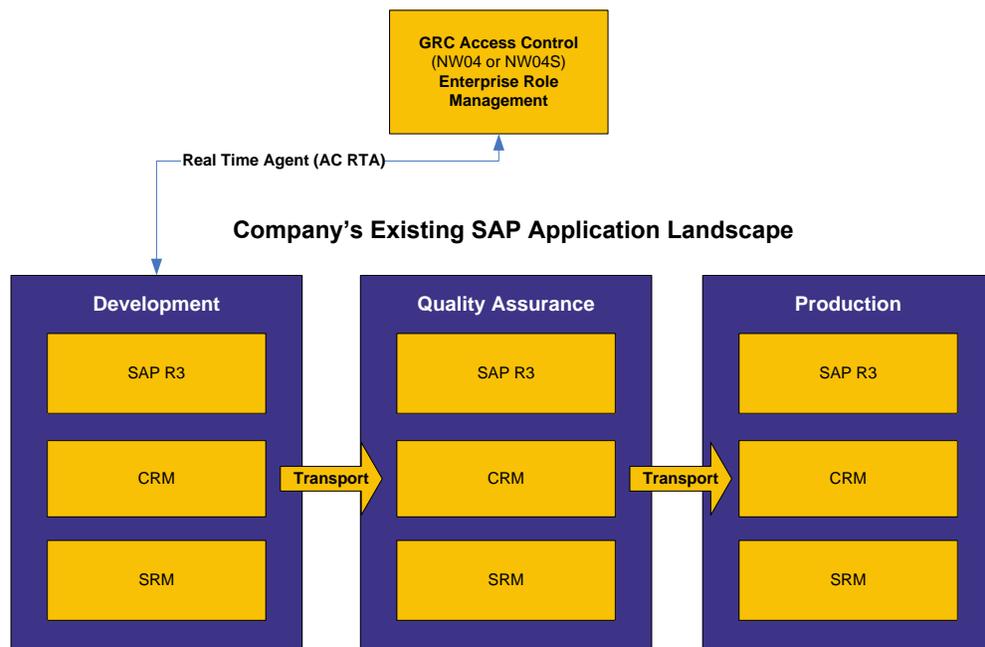
4.4 Develop and communicate enterprise role management procedures to all stakeholders

4.5 Recommended change control management

- For all systems:
 - For tracking roles changes through different systems or landscape, leverage Project Release, Role Status and custom fields within Enterprise Role Management to meet your requirements.
 -  Examples:
 - Track roles that are still in development status using Role Status 'Development'.
 - Track roles that are still in progress and not active using the Project Release field or a custom field such as 'Release Status'.
 - Track roles that are ready for user access provisioning (or user access review) using Role Status 'Production'.

- For SAP ABAP systems:
 - Generate roles in a development environment with Risk Analysis pointing to Development, QA, and/or Production systems – depending on your risk analysis requirement. It is recommended to point to a production-like system for more realistic risk evaluation.
 - Transport roles following your current change control process from ERP Dev to QA.
 - After thorough testing and risk analysis, follow your current change control process to transport roles from QA to Production.
 - Throughout the process:
 - For SAP ABAP systems:
 1. If you do not generate roles to SAP ABAP system via Enterprise role management, use Enterprise Role Management's Role Comparison feature to ensure that defined roles are synchronized with generated roles in target systems.
 2. If you generate roles to SAP ABAP system via Enterprise role management, use Enterprise Role Management's PFCG Synchronization to ensure that defined roles are synchronized with generated roles in target systems.
 - For non SAP ABAP systems:
 1. Use Enterprise Role Management's Role Comparison feature to ensure that defined roles are synchronized with generated roles in target systems.

Preferred Practice – Change Management



5. Recommended Implementation Scenarios and Use Cases

Prerequisites:

- For the approval workflow feature when using ERM as role source for user access provisioning and/or review: Compliant User Provisioning must be implemented and workflow configured and tested successfully.
- For the risk analysis feature: Risk Analysis and Remediation must be implemented with risk analysis configured and tested successfully.
- For retrieving authorization data from function feature: Risk Analysis and Remediation must be implemented and the rule set configured and tested successfully.

5.1 An enterprise role documentation solution only (Optional Risk Analysis and Approval Workflow)



Note: Only Enterprise Role Management is required for the following scenario. Compliant User Provisioning is optional for approval workflow and Risk Analysis and Remediation is optional for risk analysis.

5.1.1 Use Case – Mainly for customers who:

- Would like to document role design and definition for roles in all systems within their organization (SAP ABAP, SAP non-ABAP, and non-SAP).
- Do not want to automate role generation for SAP ABAP systems with Enterprise Role Management due to various reasons (such as Customer continues to use PFCG to maintain roles and authorization data or Customer wants to separate the role management project into phases with Phase 1 as role documentation only).
- Want to use workflow approval, for example, where electronic approval may be required as standard control for their organization (optional).
- Would like risk analysis at action level, where required by their corporate policy and procedures. Action-level risk analysis for systems with permission level authorizations may result in false positives (optional).

5.1.2 Use Case Illustration:

- Role Design team enters the role definition and actions or transaction codes.
- Role Owner approves the role.
- Security team augments the role definition with authorization data (transaction codes/objects for SAP ABAP) and creates the role natively in the target system (in PFCG for SAP ABAP).
- Role Design team tests roles and documents testing.

5.1.3 Role Methodology:

- Definition > Authorization > Risk Analysis (Optional) > Approval (Optional) > Testing
- Process:
 - Maintain the role definition in Enterprise Role Management (Role Design team in Definition and Authorization steps).
 - Maintain authorization data for documentation (Role Design team enters actions or transaction codes).
 - Identify roles that are ready to be created or maintained in target system(s) (Security team).
 - Security team can search by phase to identify roles that require action for documentation and/or role maintenance in target systems. Automatic notification for workflow is currently only available for role owners in AC 5.3.
 - Manually create/maintain role natively in target system (Development system via PFCG for SAP ABAP) per authorization data in Enterprise Role Management. Additional changes may be required in Enterprise Role Management to complete role authorization data (Security team).



IMPORTANT – For SAP ABAP systems - PFCG:

If you choose to make authorization data changes directly in PFCG to complete the role, it is recommended to launch PFCG from Enterprise Role Management by clicking on Authorization Data > Objects by Class > Maintain in PFCG to have the changed data from PFCG synch back to Enterprise Role Management. Refer to AC 5.3 Application Help for more detailed instruction.

If you choose to natively log on to PFCG directly, then you must manually maintain the authorization data changes in Enterprise Role Management.

- If required, risk analysis may be performed through integration with Risk Analysis and Remediation at the action level.
- When ready for business/role owner approval, click the 'Approval' button to submit the role to the next stage and/or trigger workflow notification.



Note: For full approval workflow and email notification function, configured workflow in Compliant User Provisioning is required. The Role Owner must have Approver authorization in Compliant User Provisioning to be able to approve requests.

- Log into Compliant User Provisioning to approve the request for role maintenance. (Role Owner)
- Perform role testing in source system. (Role Design team)
- Document role testing in Enterprise Role Management. (Role Design team – in Testing step)

5.2 An enterprise documentation, approval, preventative risk analysis, and role generation solution

 **Compliant User Provisioning and Risk Analysis and Remediation are required for the following scenarios.**

5.2.1 Use Case – Mainly for customers who:

- Have SAP ABAP, SAP non-ABAP, and other non-SAP systems within their organization and
- Want to document role definition, use workflow approval (where electronic approval may be required as standard control for their organization), perform preventative risk analysis, maintain authorization data in Enterprise Role Management, and
- Would like to utilize Enterprise Role Management as a central repository for SAP ABAP roles (including create, maintain, and generate roles in SAP ABAP systems from Enterprise Role Management), and
- Create roles for non SAP ABAP systems manually in source systems.

 **Important Note: Enterprise Role Management is not a replacement of transaction PFCG. If a customer has more complex authorization data maintenance requirements than the current authorization data functionality available in Enterprise Role Management, it is recommended to launch PFCG from Enterprise Role Management and perform data synchronization after changes are made.**

5.2.2 Use Case Illustration:

- Role Design team enters role definition and transaction codes.
- Role Design team performs risk analysis at the transaction code level.
- Security team reviews the role, refines transaction codes/objects definition, and performs risk analysis.
- Security team derives roles (if needed).
- Role Owner approves the role.
- Security team generates roles to target systems from Enterprise Role Management.
- Role Design team tests roles and documents testing.

5.2.3 Role Methodology:

- *Definition > Authorization > Risk Analysis > Derive Roles (Optional) > Approval > Generation > Testing*



Note: Roles can be searched by the 'Derive Role' phase (or 'Approval' phase, if role methodology does not include 'Derive role' phase) to identify roles that require actions to further refine authorization data. Automatic notification for workflow is currently only available for role owners in AC 5.3.

- Process:
 - Maintain the role definition in Enterprise Role Management (Role Design team).
 - Maintain authorization data at transaction code level (Role Design team enters the transaction codes)
 - Perform risk analysis at transaction code level in Enterprise Role Management (Role Design team).
 - Search for roles that are ready to be created or maintained in 'Risk Analysis' or 'Derive Role' phase (Security team).
 - Refine transaction codes/objects definition and perform risk analysis in Enterprise Role Management (Security team).
 - Derive role(s) in Enterprise Role Management, if needed (Security team).
 - When ready for business/role owner approval, click on 'Approval' to submit the role to the next stage and/or trigger workflow notification (Security team).



Note: For full approval workflow and email notification function, configured workflow in Compliant User Provisioning is required. Role Owners must have Approver authorization in CUP to be able to approve requests.

- Log into Compliant User Provisioning to approve the request for role maintenance (Role Owner).
- Search for roles in 'Generation' phase to perform role generation from ERM to the target system(s) (Security team).
- Perform role testing in the source system (Role Design team).
- Document role testing in Enterprise Role Management (Role Design team).

5.3 Role source for Compliant User Provisioning



Compliant User Provisioning and Risk Analysis and Remediation are required for the following scenarios.

5.3.1 Use Case – Mainly for customers who:

- Want to utilize ERM as detailed in Section 5.2, and
- Would like to utilize ERM as a role source for user access provisioning and/or user access review

5.3.2 Use Case Illustration:

 **Important Note:** This is applicable to roles from SAP ABAP systems only. As of AC 5.3 SP09, all role attributes required for user access provisioning and user access review can be maintained in Enterprise Role Management and synchronized to Compliant User Provisioning.

- Role Design team search and review roles which are ready for synchronization to Compliant User Provisioning. Ensure values for all required role attributes are populated.
- Role Design team synchronize roles from ERM to Compliant User Provisioning for user access provisioning and user access review.
- Compliant User Provisioning Administrator works with Role Design team to validate role synchronization results in CUP.

5.3.3 Process:

- Log on to ERM to search for applicable roles. If updates are required, perform updates per process steps in use case 5.2.2 above.
- Perform role synchronization to CUP for provisioning and user access review.
- Validate role synchronization results in CUP against role data source (ERM). If updates are needed, perform updates in ERM and resynchronize to CUP.

 **Important Note:** Custom fields at the role level will not be synchronized from ERM to CUP. When roles are resynchronized with 'Overwrite Existing' option checked, the role will be overwritten in its entirety (including any custom field and values maintain in CUP for the role).

6. Frequently Asked Questions

1. Can Enterprise Role Management be installed independently of other Access Control capabilities?
 - a. It is recommended that you install the entire Access Control 5.3 suite then perform configuration and setup for Enterprise Role Management only. However, without implementing Risk Analysis and Remediation or Compliant User Provisioning, ERM will not support certain features, such as Risk Analysis and Approval Workflow.
2. Is there an upgrade/migration path from RE 4.0 to Enterprise Role Management 5.3?
 - a. Yes, it is a migration involving some pre-configuration. Details are provided in the Access Control Upgrade guide.
3. Can Enterprise Role Management support documentation for enterprise roles across different systems, such as SAP and non-SAP?
 - a. Yes, Enterprise Role Management supports role documentation, approval, and risk analysis for all systems. Automated role generation is supported for SAP ABAP systems only.

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4. What SAP applications, such as APO and BW, are supported by Enterprise Role Management 5.3?
 - a. Enterprise Role Management 5.3 supports any SAP application with SAP_BASIS release 46C, 47/620, 640 and 700. However, automated role generation can only be performed to roles on an ABAP stack.
 5. Can we import roles existing outside of Enterprise Role Management, such as from SAP transaction PFCG, legacy systems, or Lotus Notes?
 - a. For roles from SAP ABAP systems which have been generated through PFCG, you can import roles with all authorization data by downloading them with a provided transaction code, create role information file, and import roles.
 - b. For roles that are NOT from SAP ABAP systems, you can import roles via provided role templates with authorization data at action level only.
 6. How does role comparison work in Enterprise Role Management?
 - a. You can compare multiple roles in Enterprise Role Management against one another for all system types (SAP, SAP EP, Non SAP, Enterprise) or
 - b. For SAP ABAP systems, you can compare one role in Enterprise Role Management against one role in the back end system.
 7. How do you add transactions to single roles? The authorization data button is not always visible. In which case is it available?
 - a. "Definition" is the mandatory first step in the process. It is required together with the "Authorization Data" step to utilize the authorization data function. Even if you use Enterprise Role Management for documentation purposes only, make sure to include this step when you configure the Process in the Configuration tab.
 8. How can you delete the authorization objects in Enterprise Role Management?
 - a. The authorization objects can only be disabled and cannot be deleted.
 9. How is it possible to enter the remarks that are shown in the change log?
 - a. The approval workflow is integrated with Compliant User Provisioning. When a new role or role change requires approval, Enterprise Role Management passes the change to Compliant User Provisioning in a change request. The approver logs into Compliant User Provisioning, approves the request, and enters the approval remarks. The change logs reflect comments from the Compliant User Provisioning request as Approver remarks.
 10. What are the criteria to complete the process step 'Definition' and proceed to the next workflow step?
 - a. After data is entered for all required role attributes and the user clicks on 'Save', the workflow process will trigger the next step.
 11. Is it possible to configure "Actions"?
 - a. You cannot configure actions; you can only configure steps within the Process.

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12. We do not want to use the SAP generated profile name. We need to have the profile specified in Enterprise Role Management – according to our naming convention standard – to override SAP profile. How does this work in Enterprise Role Management?
 - a. The Enterprise Role Management Profile Name will override the SAP profile name in the backend system. If the ERM Profile Name is left blank, the SAP generated profile name will be kept in the backend system.
 13. Can we view role change history for changes made in SAP PFCG?
 - a. Yes, you can view role change history for role changes made in Enterprise Role Management or in PFCG.
 14. When creating authorization data by bringing in objects via function search and add all transaction codes from a function, does the authorization data come from rule architect in Risk Analysis & Remediation rule architect or PFCG? In addition, when creating authorization data by adding a transaction code directly, where does the auth. object come from?
 - a. The actions or transaction codes come from Risk Analysis and Remediation. For SAP ABAP systems, the authorization objects come from the USBOT_C table in the connected R/3 target system.
 15. Regarding role classification via the naming convention, we need to have a field provided for role classification that is at a higher display node than a custom field. The third character in our current role name denotes role classification.
 - a. This functionality is not currently available. The suggested alternate solution is to use custom fields or use a role naming convention.
 16. Is there a way to mass import roles into Enterprise Role Management?
 - a. Yes, the template for mass role import is provided in the Help link within Enterprise Role Management.
 17. Regarding mass role change on a master role and the impact on derived role, when a change is made to a master role via mass role change, would the derived roles be automatically changed as well?
 - a. Yes, the derived roles will change automatically (per master role changes) once the master role change is made and re-generated.
 18. Is Enterprise Role Management also available for SAP CRM, BW, and or APO?
 - a. Currently, you can use Enterprise Role Management to manage documentation and approval for all SAP ERP systems such as CRM, BW, and APO roles. Enterprise Role Management can automatically generate SAP ERP roles on ABAP stacks.
 19. Where is the template for mass upload of roles into Enterprise Role Management?
 - a. For SAP ABAP systems:
 - 1) The bulk download file is generated from the ABAP systems by running transaction code /VIRSA/RE_DNLDRLES.
 - 2) The role information and org level file (only required for derived roles) files can be created using the templates exported from the Mass Role Import screen (click on red down arrows).

- b. For other systems:
 - 1) The bulk download file can be created using the templates exported from the Mass Role Import screen (click on red down arrow).
- 20. When defining roles in Enterprise Role Management, how can I enter a range of transaction codes such as MM01 – MM03?
 - a. Due to role management best practice, transaction ranges or the usage of wildcards in S_TCODE is not encouraged and it is not on our roadmap to support this practice. Currently, transaction codes can only be added one by one.
- 21. When defining roles in Enterprise Role Management, how can I enter an "*" value? For example, I might want my role to have all transactions beginning with the letter 'I', therefore how can I enter 'I*'?
 - a. Due to role management best practice, transaction ranges or the usage of wildcards in S_TCODE is not encouraged and it is not on our roadmap to support this practice. Currently, this can be achieved by searching and selecting all the transactions that meet the criteria.
- 22. How can I set up a menu structure in ERM?
 - a. You build menu structures in PFCG. These structures are not relevant in ERM but are recognized and will not be overridden by ERM when a role is generated to the ABAP system(s).
- 23. The PFCG window does not pop-up in ERM.
 - a. Check your security settings in the browser (trusted zones). Make sure the Access Control URL is included in the trusted zone.

7. Related Content

[Getting Started with SAP Access Control](#)

[Preferred Practices for SAP Access Control](#)

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