User Guide

Role Expert™ Version 4.0

with Compliance Calibrator for SAP

Note: The actual application will display V3.0.

This was the version number before SAP rebranding.

THE BEST-RUN BUSINESSES RUN SAP

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PREFACE

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About this Guide

Conventions

The following conventions are observed throughout this document:

- **Bold** sans-serif text is used to designate file and folder names, dialog titles, names of buttons, icons, and menus, and terms that are objects of a user selection.
- **Bold** text is used to indicate defined terms and word emphasis.
- *Italic* text is used to indicate user-specified text, document titles, and word emphasis.
- Monospace text (`Courier`) is used to show literal text as you would enter it, or as it would appear onscreen.

Alert Statements

The alert statements—Note, Important, and Warning—are formatted in the following styles:

Note Information that is related to the main text flow, or a point or tip provided in addition to the previous statement or instruction.

Important Advises of important information, such machine or data error that could occur should the user fail to take or avoid a specified action.

Warning Requires immediate action by the user to prevent actual loss of data or where an action is irreversible, or when physical damage to the machine or devices is possible.

Product Documentation

Documentation Formats

Documentation is provided in the following electronic formats:

- Adobe® Acrobat® PDF files
- Online help

You must have Adobe® Reader® installed to read the PDF files. Adobe Reader installation programs for common operating systems are available for free download from the Adobe Web site at www.adobe.com.

Installation Guide, Configuration Guide, User Guide, and Release Notes

You can download the Installation Guide, Configuration Guide, User Guide, and Release Notes in PDF format.

Online Help

You can access online help by clicking the **Help** link from within the application.

Contacting Virsa Systems

For information on contacting Virsa Systems, refer to the table below or the Virsa Web site www.virsa.com.

If you have any questions about the Role Expert application, framework and its components, or would like to report a problem, please contact Virsa Global Support Services.

Phone/Fax Numbers		E-mail Address	Postal Mail Address
Within U.S.	1-888-847-7217 (1-888-VIRSA-17)	support@virsa.com	47257 Fremont Boulevard Fremont, CA 94538 USA
Outside U.S.	1-877-847-7268 (1-877-VIRSA-68)		
Direct Line	510-580-1079		
Fax	510-580-1414		

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Overview

Topics covered in this chapter

Introduction

Role Expert is an ABAP based tool that automates the creation and management of Role Definitions using sound security methodology, to ensure security implementation and maintenance is streamlined and automated right from the Role Definition phase. It enforces best practices to ensure that the Role Definitions, development, testing and maintenance are consistent across the entire implementation, resulting in lower ongoing maintenance and painless knowledge transfer.

Role Expert helps the Role Owners and Security Administrators to create and maintain Role definitions, identify potential Audit and Segregation Of Duties (SOD) issues, and automate many other laborious tasks such as comparing the role definitions with the real roles in SAP and generating roles. It empowers SAP security administrators and Role Owners to document all the important role information that can be of great value for better role management, allowing them to track their progress during implementation and monitor the overall quality of the implementation.

Some best practices are:

- Design a good Role naming convention.
- Integrate Role Expert into ongoing role development, testing, and change management Processes.
- Identify Users (Role Owners, Security Administrators, and User Administrators) and how they will use Role Expert and customize Role Expert Roles accordingly. See Appendix 6, “Installation and Setup” for more information about the standard Role Expert Roles.
- Define goals (e.g. Role Optimization or Consolidation, User Access Optimization, Reducing risk, Reducing the role change requests by x%).
- Identify custom reports and attach them to Role Expert.

Role Expert has a rich set of reports to facilitate the overall role quality management and provide valuable information, to achieve precise role definitions and to lower ongoing role maintenance.

Role Expert provides reports, which make the identification of risks surrounding the segregation of duties a painless process, and ensures that you get the most out of the SAP security system.

Segregation of Duties (SoD) Concept

SoDs are a primary internal control intended to prevent, or decrease the risk of errors or irregularities, identify problems, and ensure corrective action is taken. This is achieved by assuring no single individual has control over all phases of a business transaction.

There are four general categories of duties:

- Authorization
- Custody
- Record keeping
- Reconciliation

In an ideal system, different employees perform each of these four major functions. In other words, no one employee has control of two or more of these responsibilities. The more negotiable the asset, the greater the need for proper segregation of duties—especially when dealing with cash, negotiable checks, and inventories.

There are business areas where SoDs are extremely important, for example, Cash Handling, because cash is a highly liquid asset. This means it is easy to take money and spend it without leaving a trail of where it went. Any department that accepts funds, has access to accounting records, or has control over any type of asset, should be concerned with segregation of duties. Some examples of incompatible duties are:

- Authorizing a transaction, and receiving and maintaining custody of the asset that resulted from the transaction.
- Receiving checks (payment on account) and approving write-offs.
- Depositing cash and reconciling bank statements.
- Approving time cards and having custody of pay checks.

SoDs can be quite challenging to achieve in a small operation, as it is not always possible to have enough staff to properly segregate duties. In those cases, management may need to take a more active Role to achieve separation of duties, by checking the work done by others or using other Mitigating Controls.

Role Expert helps automate all SoD-related activities, for example, defining and monitoring SoD conflicts, proactive prevention of SoD conflicts, and the use of Mitigation Controls.

The following sections explain these Role Expert features in detail.

Overview

This guide describes the Role Expert 4.0 features and functionality for version SAP 4.6c and higher.

Note The *Compare Users Roles* utility in the Tool Box is not supported in non-HR systems.

Navigation in Role Expert

You can access Role Expert from the User Menu or with transaction code `/VIRSA/VRMT`. The **Initial** page is displayed.

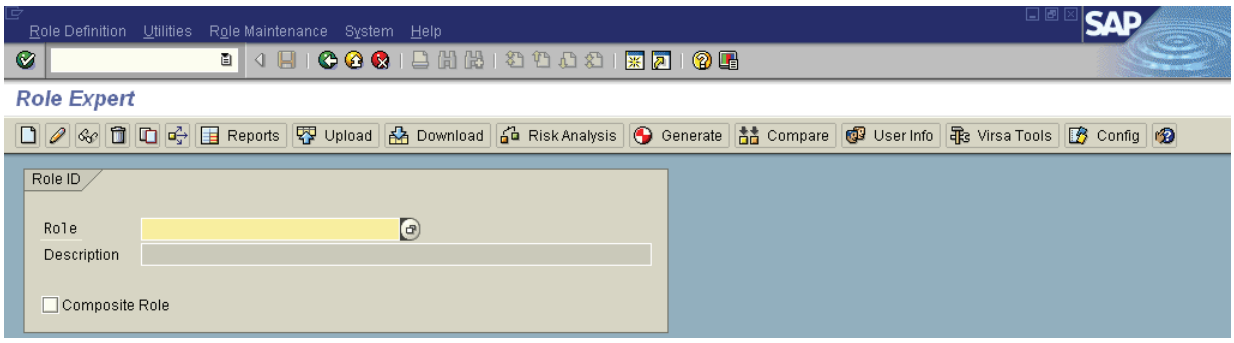


Figure 1 Initial Page

Using Role Expert

There are several pages, menus, and toolbars you use to access all of Role Expert's features. The following sections provide an overview of each page and its associated menus and toolbars.

Initial Page

The **Initial** page, shown in Figure 1, is the first page you see in Role Expert. It has the following menus:

- **Role Definition**—This menu lists all the commands available from the **Initial** page toolbar.
- **Utilities**—This menu contains menu items for maintaining your Critical Transactions table and Role Expert's Configuration Options.
- **Role Maintenance**—This menu provides access to the PFCG Role Generator. It also contains a menu item for deleting the Change History for the Role specified in the **Initial** page.

Initial Page Toolbar

This toolbar has 16 buttons.

Figure 2 Initial Page Toolbar

- —The **New Role** button creates a new Role with the name you enter in the **Role** field, and displays the **Role Definition Form** page in change mode.
- —The **Change** button displays the **Role Definition Form** page for the Role name you entered in the **Role** field. If the Role has not been created using Role Expert you'll see an error message.
- —The **Display** button displays the **Role Definition Form** page for the Role name you entered in the **Role** field. In display mode you cannot modify the Role definition. If the Role has not been created using Role Expert you'll see an error message.
- —The **Delete** button deletes the Role specified in the **Role** field. Enter the name of the Role Expert Role in the **Initial** page.
- —The **Copy** button provides the ability to copy a Role to a different name. Enter the name of the Role Expert Role in the **Initial** page.
- —The **Where-used List for Inheritance Hierarchy** button performs the same function as in PFCG; it displays the Role inheritance table.
- **Reports**—This button displays a form you can use to generate a Role report. See section "Role Report" on page 34 in Chapter 4, "Reports and Utilities" for more information.
- **Upload/Download**—These button provide the ability to upload and download Role definitions. See Appendix 8, "Maintaining Role Expert Roles Offline" for more information.
- **Risk Analysis**—This button displays a form for generating different kinds of Risk Analysis reports. See Chapter 3, "Running Risk Analyses" for more information.
- **Generate**—This button performs two functions. If the Role you are generating is new, clicking this button generates a Transaction-level Risk Analysis report and then generates a new SAP Role. If you click this button to generate modifications, e.g. to add or delete transactions to an existing SAP Role, an Object-level Risk Analysis report is displayed and then the PFCG page is displayed. You must use PFCG to complete generating your modifications to the SAP Role.
- **Compare**—This button compares a Role Expert Definition with an existing SAP Role. If the Role has not been generated you'll see an error message.
- **User Info**—This button displays a list of Users assigned to the Role.
- **Virsa Tools**—This button displays the list of Role Expert Reports and Utilities.
- **Config**—This button displays Role Expert's Configuration Options table.

Role Definition Form Toolbar

Figure 3 Role Definition Form Toolbar

- **Single Roles**—This button only appears if you are defining or modifying a Composite Role. Clicking this button displays the Single Roles page, used to add or remove Single Roles.
- **Transactions**—This button displays the Transactions page, used to add or remove transactions assigned to the Role. From the Transactions page you have access to Transaction Role History, Manual TCodes, and Details. See section "Defining and Maintaining Transactions" on page 22 in Chapter 2, "Managing Roles" for more information.
- **Object List**—This button displays the Objects page. Object List information is only available if you have generated the Role.
- **Change/Display**—This button toggles the ability to modify the information in the **Role Definition Form** page.
- **Generate**—Clicking this button performs two functions. If the Role you are generating is new, clicking this button generates a Transaction-level Risk Analysis report and then generates a new SAP Role. If you click this button to generate modifications, for example, to add or delete transactions to an existing SAP Role, an Object-level Risk Analysis report is displayed and then the PFCG page is displayed. You must use PFCG to complete generating your modifications to the SAP Role.
- **Compare**—This button compares a Role Expert Definition with an existing SAP Role. If the Role has not been generated, you'll see an error message.
- **User Info**—This button displays a list of Users assigned to the Role.
- **Virsa Tools**—This button displays the list of Role Expert Reports and Utilities.

2

Managing Roles

Topics covered in this chapter

Introduction

Role Expert maintains a Role Definition database. When you define a Role using Role Expert, all the information for that Role is stored in the database. A Role Expert Role Definition is maintained separately from a Role created and generated through PFCG.

Once you have defined a Role using Role Expert, the definition is used to generate an SAP Role. Role generation is performed in one of two ways, depending on whether or not the SAP Role already exists:

- **Creating New Roles**—Role Expert creates new SAP Roles without the need of using PFCG. When you click the **Generate** button, Role Expert uses the Role definition you saved and generates an SAP Role.
- **Modifying Existing Roles**—When you modify a Role Expert Role definition and then click the **Generate** button, Role Expert transfers the modifications to the SAP Role and displays the PFCG page. You can use the **Generate** button in PFCG to include the modifications and generate the SAP Role.

Role Expert stores high-level Role information, such as Role descriptions, and also stores transaction-level and object-level information. In order to store this information the following steps are performed:

- Define a new Role using Role Expert.
- Generate the Role using the **Generate** button in Role Expert.

Defining and Maintaining Role Definitions

The **Role Definition Form** page is used to create new Role Expert Roles and modify existing Role Expert Roles.

You can click **Save** at any time to save your Role Expert Role definition.

Initial Page

To display the **Role Definition Form** page, you must specify a Role name in the **Initial** page. If the Role already exists in Role Expert's database, you can click the pop-up button and choose the Role name from the displayed list. If the Role is not in the Role Expert database, you can create it.

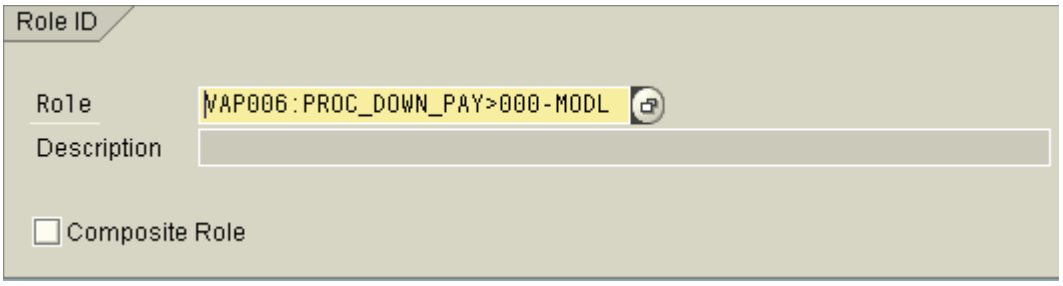


Figure 4 Initial Page

Role Definition Form

In the **Role Definition Form** page, you can document all the values for a Role. The **Role Definition Form** page also collects and stores Risk Analysis and historical information about a Role.

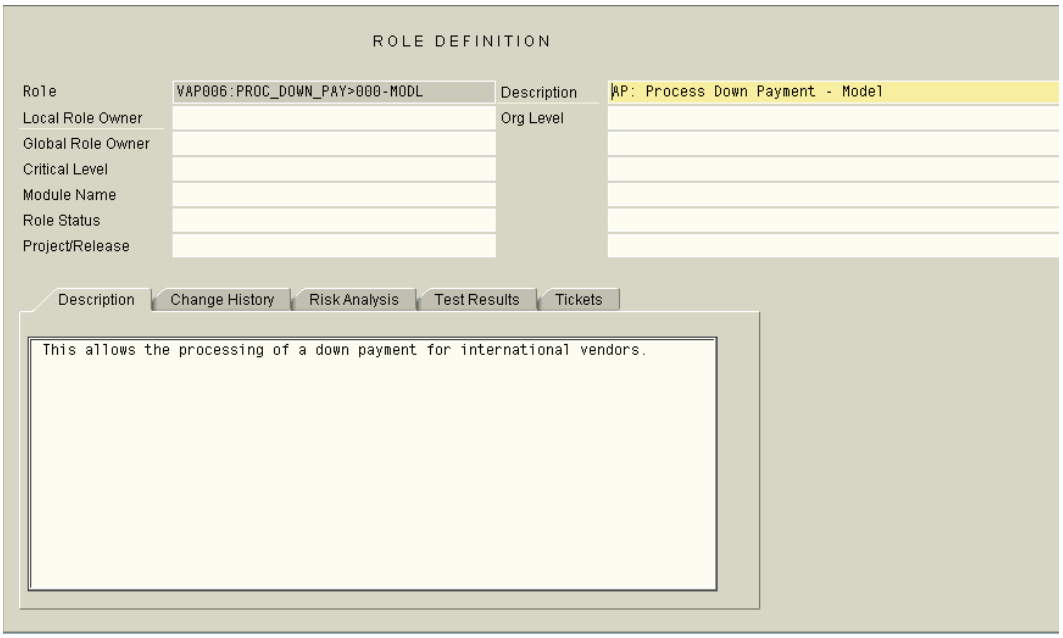


Figure 5 Role Definition Form Page

The **Role Definition Form** page is divided into six areas.

Header Information

The header information area is in the top half of the **Role Definition Form** page. This area defines the Role information, including Short Role Description and Local and Global Role Owners.

The **Critical Level**, **Module Name**, **Role Status**, and **Org Level** fields use pop-up menus to display valid field values.

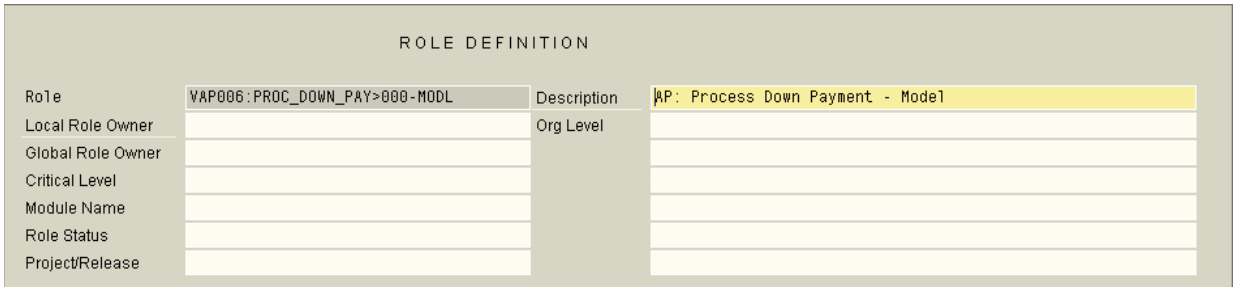


Figure 6 Role Definition Form Page, Header Information

Description Tab

The **Description** tab contains a free-text field and stores any descriptive information.

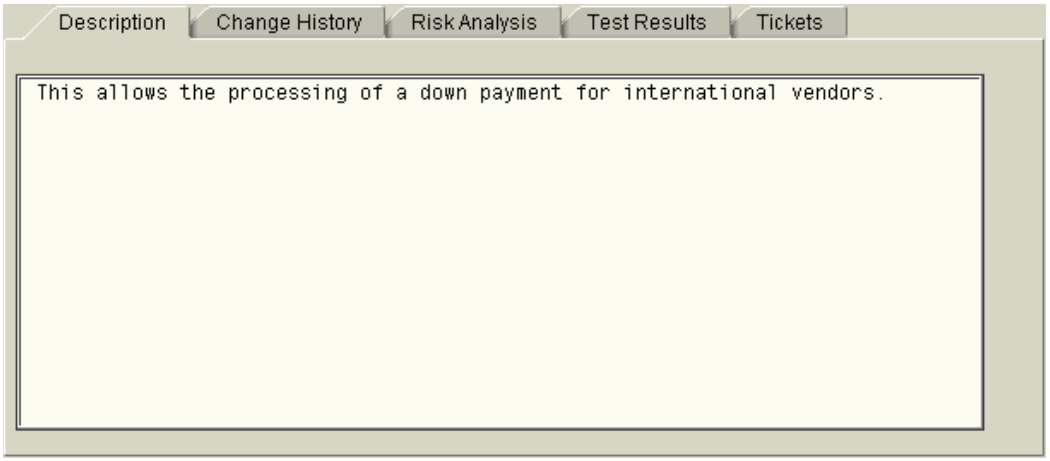


Figure 7 Role Definition Form Page, Description Tab

Change History

The **Change History** tab is updated automatically each time you save changes to the Role you are defining.

Each line item in the **Change History** tab displays the transactions added or deleted and the name of the person making the changes.

Note The Ticket # is also captured in the **Change History** tab if you have the Configuration Option **Ticket Maintenance** set to YES.

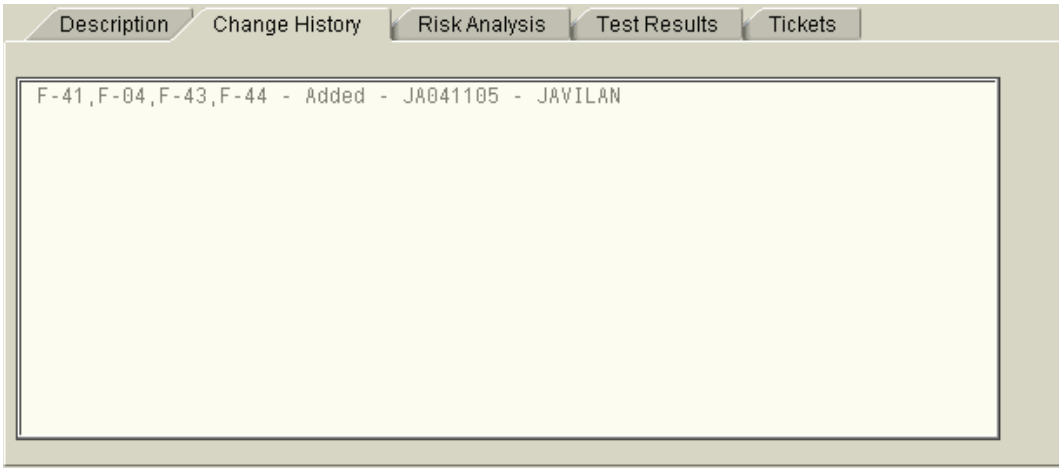


Figure 8 Role Definition Form Page, Change History Tab

Risk Analysis

The **Risk Analysis** tab is updated each time you perform a Risk Analysis.

Each Risk Analysis is identified by a line item with the name of the person using Role Expert, and the time and date the analysis was run. Every line item after the date and time stamp identifies the SoD. There are two types of risks with different Risk IDs:

- Risks with four-character Risk IDs identify a critical transaction.
- Risks with seven-character Risk IDs identify conflicting transactions

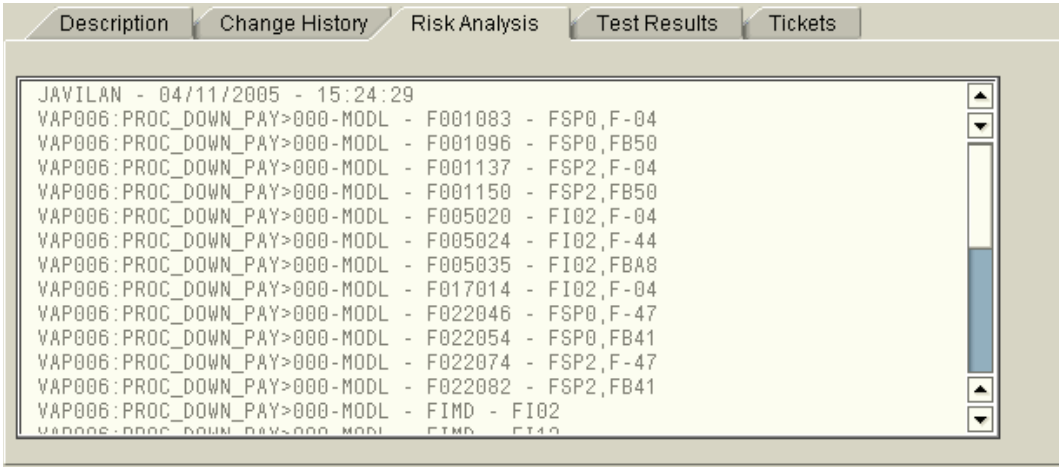


Figure 9 Role Definition Form Page, Risk Analysis Tab

Test Results

The **Test Results** tab contains a free-text field. You can store any information in this tab.

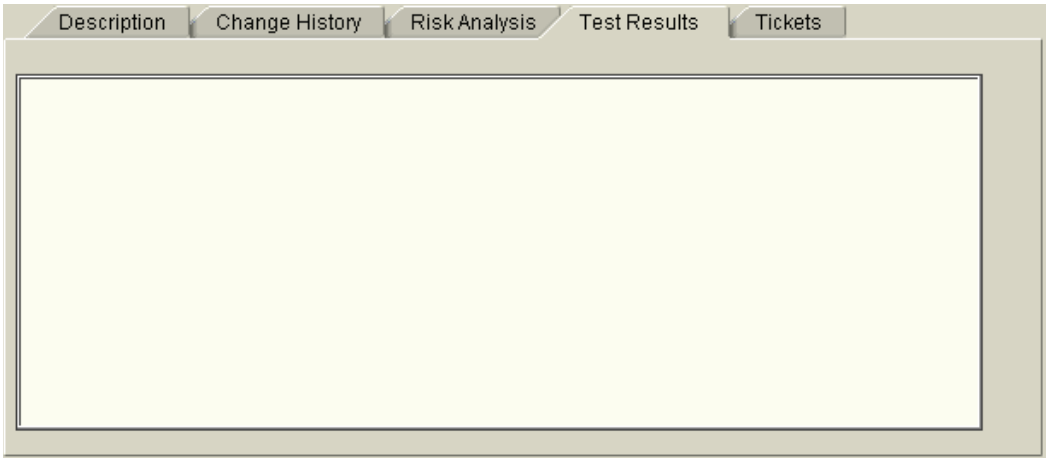


Figure 10 Role Definition Form Page, Test Results Tab

Tickets Tab

The **Tickets** tab is updated only if the Configuration Option **Ticket Maintenance** is set to YES. The **Tickets** tab collects the date and time information about transaction changes to a Role. Role changes are made through the **Transactions** page. Each line item in the **Tickets** tab displays the Ticket Number, the User ID of the person making the change, and the date and time of the change.

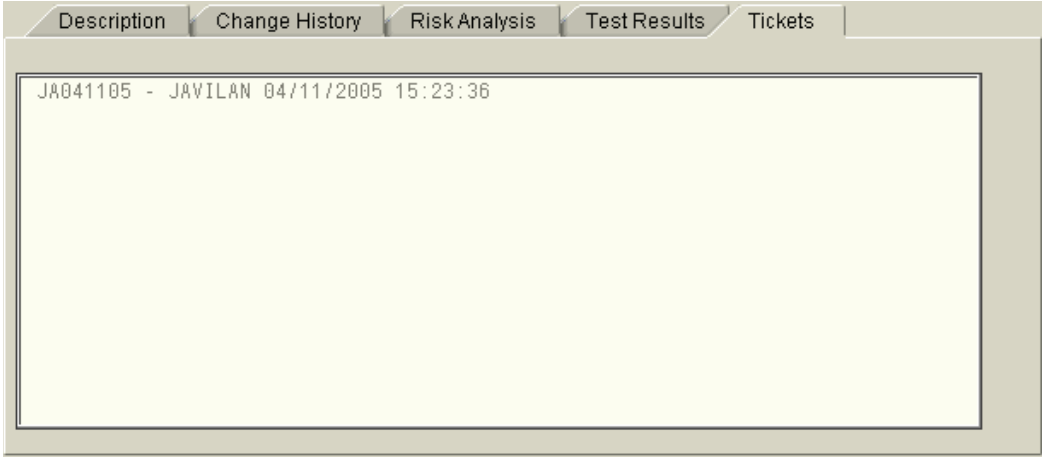


Figure 11 Role Definition Form Page, Tickets Tab

Defining and Maintaining Transactions

Click the **Transactions** button to display the Transactions table. The Transactions table is used to assign transactions to your Role.

Transactions	Transaction Description	Add Ticket No.	Delete Ticket No.	Authorization Details	Remarks	Inserted By	Date
F-41	Enter Vendor Credit Memo	JA041105				JAVILAN	04/11/2005
F-43	Enter Vendor Invoice	JA041105				JAVILAN	04/11/2005
F-44	Clear Vendor	JA041105-1		per PSmith	Mitigation ID MCAP004012	JAVILAN	04/11/2005
FB02	Change Document	JA041105-2		per PSmith		JAVILAN	04/11/2005

Figure 12 Role Definition Transactions Page

The Transactions table consists of the following columns:

- **Transactions**—This column stores the transaction code assigned to the Role. You can enter a TCode, or choose one from the pop-up menu.
- **Add Ticket No./Delete Ticket No.**—Ticket numbers are a way of tracking Role modifications. Ticket Numbers may be any character string. You must enter a Ticket Number when adding or deleting a transaction to the Role.
  - Ticket Number values are stored when you save changes to the Role.
  - You cannot use the same ticket number for a transaction if you have previously saved a ticket number value.

Note The **Add Ticket No.** and **Delete Ticket No.** columns appear only if the Configuration Option **Ticket Maintenance** is set to YES.

- **Authorization Details**—This column defines how a transaction should be modified at the object-level for the Role. This field is a free-text field.
- **Remarks**—This field is a free-text field.

Reviewing Role History

The Role History table displays a list of all the transactions that have been assigned to your Role. It includes all the transactions previously assigned, but have been deleted. Deleted transactions appear in blue.

Trans/Report	Tran/Report Description	Authorization Details	Remarks	Inserted By	Date	Deleted By	Date
F-04	Post with Clearing			JAVILAN	04/11/2005	JAVILAN	04/11/2005
F-41	Enter Vendor Credit Memo			JAVILAN	04/11/2005		
F-43	Enter Vendor Invoice			JAVILAN	04/11/2005		
F-44	Clear Vendor			JAVILAN	04/11/2005	JAVILAN	04/11/2005
F-44	Clear Vendor	per CChavez	will mitigate SoD	JAVILAN	04/11/2005		

Figure 13 Role History Table

You can also drill down to see further details of a specific transaction by double-clicking the transaction code. The Transaction Record table displays all the changes made to a single transaction, including the dates the transaction was added or deleted, and any changes to the **Authorization Details** and **Remarks** fields.

Trans/Report	Tran/Report Description	Authorization Details	Remarks	Inserted By	Date	Deleted By	Date
F-44	Clear Vendor	per CChavez	will mitigate SoD	JAVILAN	04/11/2005	JAVILAN	04/11/2005
F-44	Clear Vendor	per PSmith	Mitigation ID MCAP004012	JAVILAN	04/11/2005		

Figure 14 Role History—Transaction Record Table

Reviewing Transaction Details

You can click to the left of a line item in the Transactions table and then click the **Details** button to display the **Transactions Detail** page.

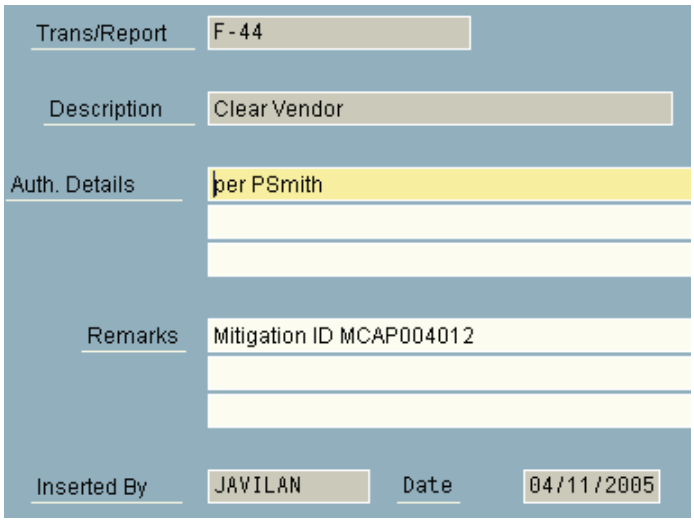


Figure 15 Transactions Detail Page

Reviewing Manual TCodes

The **Manual TCodes** button displays the list of transaction codes added manually to the **S_TCODE** field through PFCG. Each time you click the **Manual TCodes** button, Role Expert refreshes the list of manual transaction codes from PFCG.

Role	Transactions
VAP006:PROC_DOWN_PAY>000-MODL	F-04
VAP006:PROC_DOWN_PAY>000-MODL	F-46
VAP006:PROC_DOWN_PAY>000-MODL	F-53
VAP006:PROC_DOWN_PAY>000-MODL	F-56
VAP006:PROC_DOWN_PAY>000-MODL	FB01

Figure 16 Manual TCodes Table

Comparing SAP Roles and Role Expert Definitions

The **Compare** button displays any differences between your Role Expert Role Definition and the generated SAP Role. You can perform Role comparisons from the **Initial** page or from the **Role Definition Form** page. The following report page displays any differences.

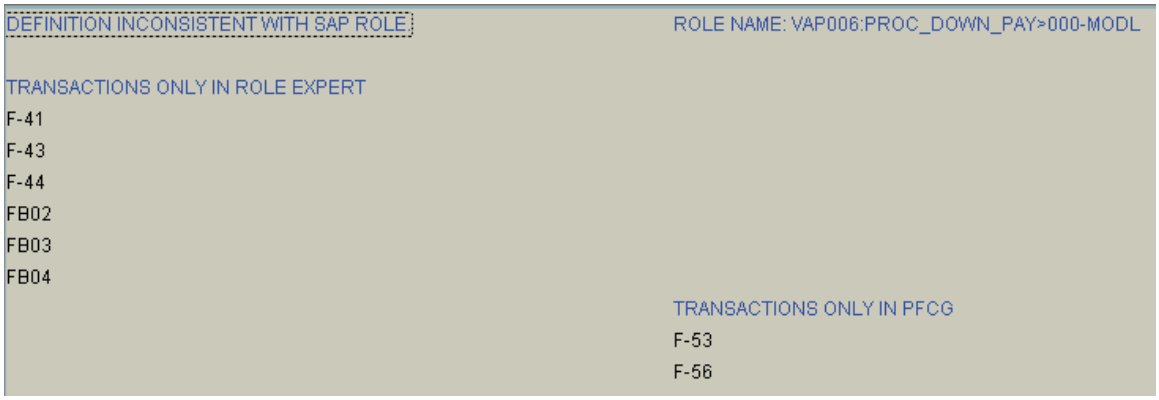


Figure 17 Comparing Role Expert Role Definition and SAP Role

Displaying User Information

Clicking the **User Info** button displays a list of all the Users assigned to your Role.

User name	Full Name	Role	Start Date	End Date
CONT2000	Steffi Jones	VAP006:PROC_DOWN_PAY>000-M...	02/15/2005	12/31/9999

Figure 18 User Info

Reviewing Objects Assigned to a SAP Role

If you have generated your Role, clicking the **Object List** button displays the list of objects associated with the transactions assigned to your Role.

Object History

Object	Authorization	Description
F_BKPF_BUK	VAP006MODL01	Accounting document: Authorization for company codes
F_BKPF_BUP	VAP006MODL01	Accounting document: Authorization for posting periods
F_BKPF_GSB	VAP006MODL01	Accounting document: Authorization for business areas
F_BKPF_KOA	VAP006MODL01	Accounting document: Authorizaton for account types
F_BNKA_MAN	VAP006MODL00	Banks: General Maintenance Authorization

Figure 19 Object List

Object History

You can click to select one or more objects in the Object list and then click **Object History** to see any changes made to the object.

```
Object
  Authorization
                                                    Change by        on          at
*** Deleted entries ***                              *** Created entries ***

F_BKPF_BUK   Accounting Document: Authorization for Company Codes
  VAP006MODL01 Accounting document: Authorization for company codes
                                                    BGUPTA           02/23/2005  10:45:07
                                                     *** Authorization created ***
                                                    Activity
                                                      01, 03
                                                    Company Code
                                                      *

F_BKPF_GSB   Accounting Document: Authorization for Business Areas
  VAP006MODL01 Accounting document: Authorization for business areas
                                                    BGUPTA           02/23/2005  10:45:07
                                                     *** Authorization created ***
                                                    Activity
                                                      01, 03
                                                    Business Area
                                                      *
```

Figure 20 Object History

Defining a Composite Role

You can create and define a Composite Role from the **Initial** page using the **Composite Role** check box.

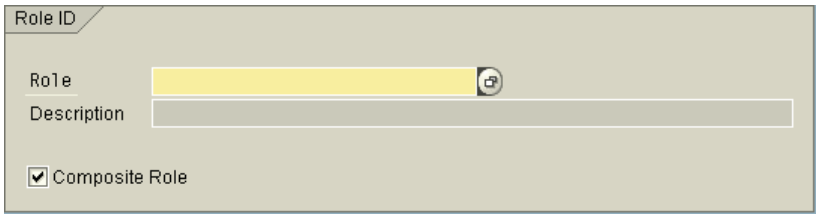


Figure 21 Creating a Composite Role

If you are creating or modifying a Composite Role, the **Single Roles** button appears on the **Role Definition Form** page toolbar.

Clicking the **Single Roles** button displays the table used to add single roles to your Composite Role.

- Only Role Expert Roles may be added to the Composite Role. If you want to add a Role created with PFCG, you must first use the **Upload** feature to add the Role to Role Expert.
- Each single Role you add to the table can be selected. You can then use the standard Role Expert features to perform an SoD Analysis, Display User Info, etc.
- You can double-click the single Role name to display that Role in the **Role Definition Form** page. Once displayed, you can make any changes you want, generate the modified single Role, and return to Role Expert to continue defining your Composite Role.

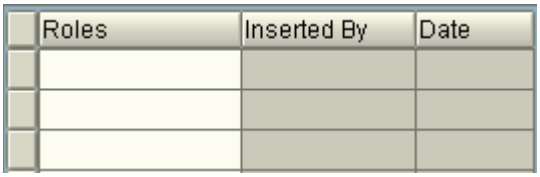


Figure 22 Adding Single Roles to a Composite Role

3

Running Risk Analyses

Topics covered in this chapter

Introduction

Risk Analysis through Role Expert includes Critical Transactions stored in the Critical Transactions table and conflicting transactions stored in Compliance Calibrator's Transaction-level Rules table.

There are three methods used to perform Risk Analysis and to generate a Risk Analysis report:

- **Risk Analysis Button from the Initial Page**—Running a Risk Analysis using this button enables you to generate separate Critical Transactions reports and Transaction-level Risk Analysis reports. You can also perform transaction simulations.
- **Risk Analysis Button from the Role Definition Form Page**—This button generates a transaction-level Risk Analysis report that includes critical transactions.
- **Generate Button**—This button generates an object-level Risk Analysis report if the specified Role has been previously generated.

Maintaining the Critical Transactions Table

The Critical Transactions table identifies and stores critical transactions. Both Role Expert and Compliance Calibrator maintain the Critical Transactions table.

Critical Transactions

Transaction code	Risk Id	Risk Description	Risk Level	Status
AARC	BS00	Archiving Asset Accounting	Medium	Enable
ACLA	BS00	Archiving class definition	Medium	Enable
AL02	BS00	Database Alert Monitor	Medium	Enable
AL04	BS00	Monitor Call Distribution	Medium	Enable

Figure 23 Critical Transactions Table

Note The Role Expert Critical Transactions table displays values from the Compliance Calibrator Critical Transactions table. If you do not have Compliance Calibrator 4.0 installed, Risk IDs are not supported for Critical Transactions.

Transaction Level Risk Analysis

You can run the Transaction-level risk analysis from the **Initial** page and the **Role Definition Form** page using the **Risk Analysis** button.

When you run the Risk Analysis from the **Initial** page, the following **Risk Analysis Form** page appears.

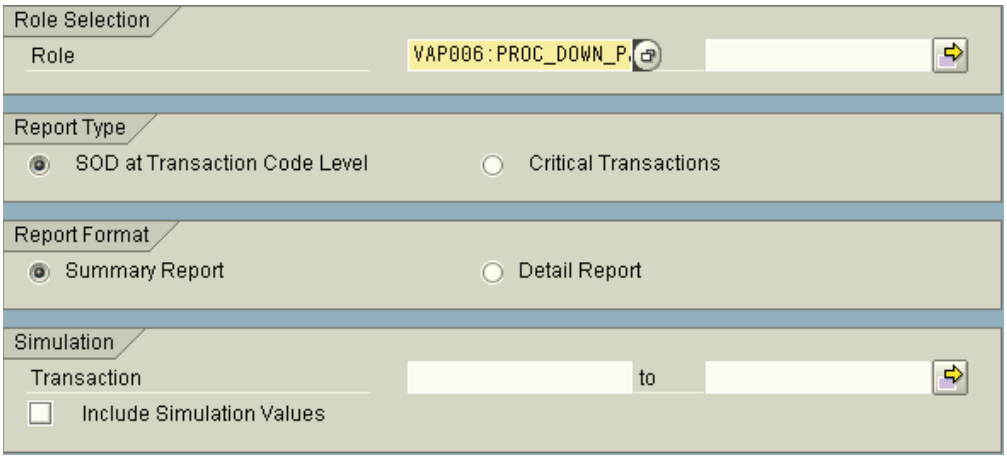


Figure 24 Risk Analysis Form Page

You can choose to run a transaction-level Risk Analysis and generate a Summary or Detail report, or you can run a Critical Transactions Risk Analysis.

Role	Transaction/SOD	Risk Id	Risk Description	Risk Level
VAP006:PROC_DOWN_PAY>000-MODL	FSP0,FB50	F001096	Maintain fictitious GL account & hide activity via postings	MEDIUM
VAP006:PROC_DOWN_PAY>000-MODL	FSP2,FB50	F001150	Maintain fictitious GL account & hide activity via postings	MEDIUM
VAP006:PROC_DOWN_PAY>000-MODL	FI02,F-44	F005024	Maintain bank account and post a payment from it	HIGH
VAP006:PROC_DOWN_PAY>000-MODL	FI02,FBA8	F005035	Maintain bank account and post a payment from it	HIGH

Figure 25 Transaction-Level Risk Analysis—Summary Report

Role	Role Description	Risk Id	Single Role	Authorization	Field	Value	Risk Description	Risk Level
VAP006:PROC_DOWN_PAY>...	AP: Process Down Payment - Model	F001096		S_TCODE	TCD	FSP0	Maintain fictitious GL ...	Medium
VAP006:PROC_DOWN_PAY>...	AP: Process Down Payment - Model	F001096		S_TCODE	TCD	FB50	Maintain fictitious GL ...	Medium
VAP006:PROC_DOWN_PAY>...	AP: Process Down Payment - Model	F001150		S_TCODE	TCD	FSP2	Maintain fictitious GL ...	Medium
VAP006:PROC_DOWN_PAY>...	AP: Process Down Payment - Model	F001150		S_TCODE	TCD	FB50	Maintain fictitious GL ...	Medium
VAP006:PROC_DOWN_PAY>...	AP: Process Down Payment - Model	F005024		S_TCODE	TCD	FI02	Maintain bank accou...	High

Figure 26 Transaction-Level Risk Analysis—Detail Report

Role	Transaction/SOD	Risk Id	Risk Description	Risk Level
VAP006:PROC_DOWN_PAY>000-MODL	FI02	FIMD	Change Bank	MEDIUM
VAP006:PROC_DOWN_PAY>000-MODL	FI12	FIMD	Change House Banks/Bank Accounts	MEDIUM

Figure 27 Critical Transactions Summary Report

Role	Role Description	Risk Id	Single Role	Authorization	Field	Value	Risk Description	Risk Level
VAP006:PROC_DOWN_PAY>000-MODL	AP: Process Down Payment - Model	FIMD		S_TCODE	TCD	FI02	Change Bank	Medium
VAP006:PROC_DOWN_PAY>000-MODL	AP: Process Down Payment - Model	FIMD		S_TCODE	TCD	FI12	Change House Banks/Bank Accounts	Medium

Figure 28 Critical Transactions Detail Report

Object Level Risk Analysis

For existing SAP Roles, when you click the **Generate** button in Role Expert, you can perform an object-level Risk Analysis.

Role	Role Description	Risk Id	Single Role	Authorization	Authorization Object	Field	Value	Risk Description	Risk Level
VAP006:PROC_DOW...	AP: Process Down...	F00108301	VAP006:PROC_D...	VAP006MODL01	F_BKPF_KOA	ACTVT	01	Maintain fictitious GL ...	Medium
VAP006:PROC_DOW...	AP: Process Down...	F00108301	VAP006:PROC_D...	VAP006MODL01	F_BKPF_KOA	KOART	S	Maintain fictitious GL ...	Medium
VAP006:PROC_DOW...	AP: Process Down...	F00108301	VAP006:PROC_D...	VAP006MODL01	F_SKA1_KTP	ACTVT	01-02	Maintain fictitious GL ...	Medium
VAP006:PROC_DOW...	AP: Process Down...	F00108301	VAP006:PROC_D...	VAP006MODL01	F_SKA1_KTP	ACTVT	05-06	Maintain fictitious GL ...	Medium

Figure 29 Generating an Object-Level SoD Analysis

This report only displays object-level risk information for those transactions already associated with the SAP Role. To include transactions you are adding to your Role Expert Role, perform the following steps.

▶ **To include transactions you are adding to your Role Expert Role:**

1. Click **Generate** to run the initial object-level Risk Analysis on the existing SAP Role.
2. Once the object-level Risk Analysis report is displayed, click **Forward** to display the PFCG page and generate the Role with the new transactions you added through Role Expert.
3. Click **Back** to return to Role Expert.
4. Click **Generate** a second time to run a new object-level Risk Analysis. The new Risk Analysis report includes the additional transactions.

Simulating Adding Transactions to a Role

When you run a Risk Analysis using the **Risk Analysis** button on the **Initial** page, you can also simulate adding transactions to a Role. The resulting report includes risks based on the simulated transactions.

Specify the transaction or range of transactions and click **Include Simulation Values**. Then click the **Execute** button. Risks generated from simulated transactions appear in a different color in the Risk Analysis report.

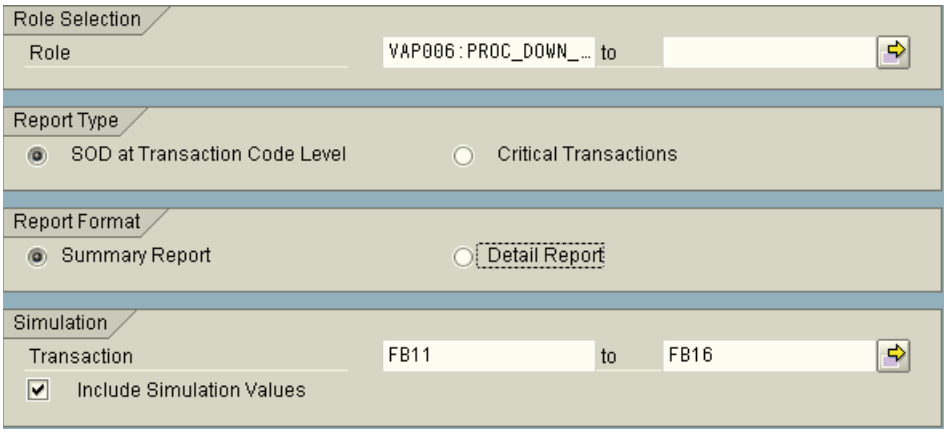


Figure 30 Running a Simulation Risk Analysis

Role	Transaction/SOD	Risk Id	Risk Description	Risk Level
VAP006:PROC_DOWN_PAY>000-MODL	FSP0,FB11	F001094	Maintain fictitious GL account & hide activity via postings	MEDIUM
VAP006:PROC_DOWN_PAY>000-MODL	FSP0,FB50	F001096	Maintain fictitious GL account & hide activity via postings	MEDIUM
VAP006:PROC_DOWN_PAY>000-MODL	FSP2,FB11	F001148	Maintain fictitious GL account & hide activity via postings	MEDIUM
VAP006:PROC_DOWN_PAY>000-MODL	FSP2,FB50	F001150	Maintain fictitious GL account & hide activity via postings	MEDIUM

Figure 31 Simulation Risk Analysis

4

Reports and Utilities

Topics covered in this chapter

Introduction

Role Expert provides a rich set of reports for monitoring the current status or tracking the progress in role definition and development, role analysis, and role change management.

Role Report

This report is accessible from the **Initial** page toolbar.

You can specify one or more values before clicking **Execute**.

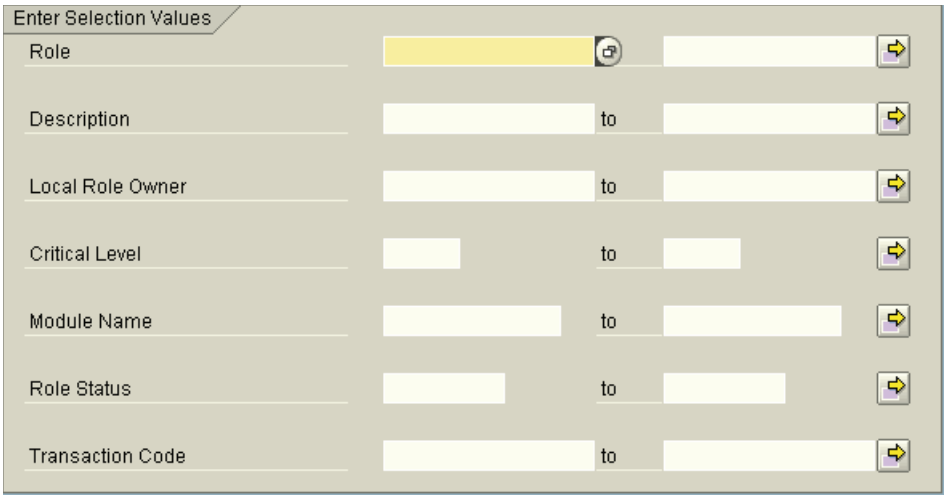


Figure 32 Role Report Form

Role	Role Name	Prmy. Ownr	Full Name	RskLvl	Module Name	Role Stat.	Org.Level
VAP006:PROC_DOWN_PAY>000-...	AP: Process Down Payment - Model						

Figure 33 Role Report

Check TCodes in Menu and Authorizations

This report displays the discrepancies between the Transaction Codes in the **Menu** tab and in the **Authorization** tab of the Roles, and the total number of discrepancies.

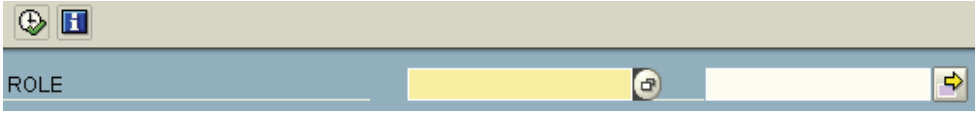


Figure 34 Check TCodes in Menu and Authorizations Form

Check tcodes in menu and authorizations

Tcode	Role	S_TCODE	Menu	User
F-04	VAP006:PROC_DOWN_PAY>000-MODL	X		BGUPTA
F-46	VAP006:PROC_DOWN_PAY>000-MODL	X		BGUPTA
FB01	VAP006:PROC_DOWN_PAY>000-MODL	X		BGUPTA

Total entries with discrepancies: 3

Figure 35 Check TCodes in Menu and Authorizations Report

Compare Users Roles

This report compares the Roles assigned to User ID and Personnel #.

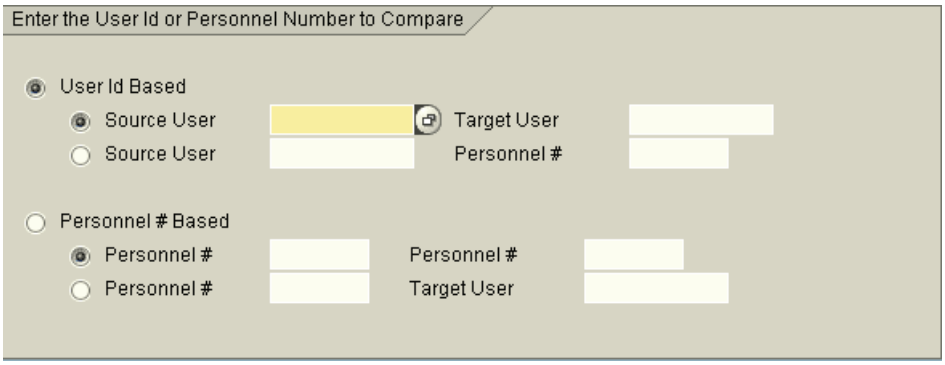


Figure 36 Compare Users Roles Form

Target User: EMPL4500
Position: 00000000

Action	Role	Role Description
KEEP	VUS001:BASIC_PRD_USR>000-ENTR	MYSAP: Basic User Access
REMOVE	VMM003:MMGENDATADISP>000-ENTR	MM General Display
REMOVE	VMM025:MM_MAT_HANDL>000-MODL	MM: Warehouse Management Material Handler - Model

Figure 37 Compare Users Roles Report

List Roles Assigned to a User

This report lists the User, User Group, Role Name and Role Description. The list excludes Single Roles of Composite Roles assigned to Users.

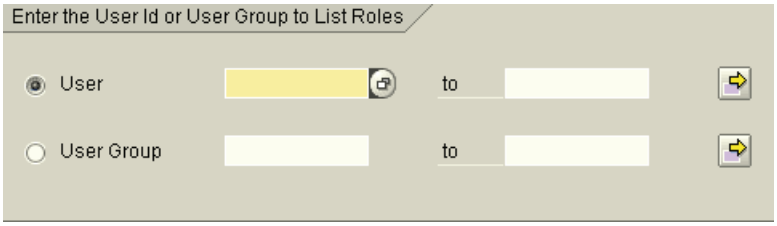


Figure 38 List Roles Assigned to a User Form

User	User Group	Role Name	Role Description
BJONES	ACCOUNTING	Z_AP_SUPERVISOR	AP: Supervisor
		Z_AP_VM_MAINTAINER	Accounts Payable Vender Master Maintainer
BKING	SUPER	DEVELOPER	Virsa Developer
		HRTEST	
		SAP_BC_SRV_OFC_ADMIN_AG	Business Workplace: Mailing, calendar, folders, external communication
		TEST10	TEST10
		TEST9	TEST9
		TEST_SROLE3	test single role 3
		TEST_SROLE4	test single role 3
		Z.POSITION	temp access for Chandru
		Z_VIRSA_DEVELOPER	Virsa Developer

Figure 39 List Roles Assigned to a User Report

Roles/Composite Roles Relationship

This report shows the relationship between Roles and Composite Roles. If you choose the **Composite Role** option, enter a Composite Role name to display a list of single Roles associated with the Composite Role. If you choose the **Single Role** option, enter a single Role to display a list of Composite Roles associated with the single Role.

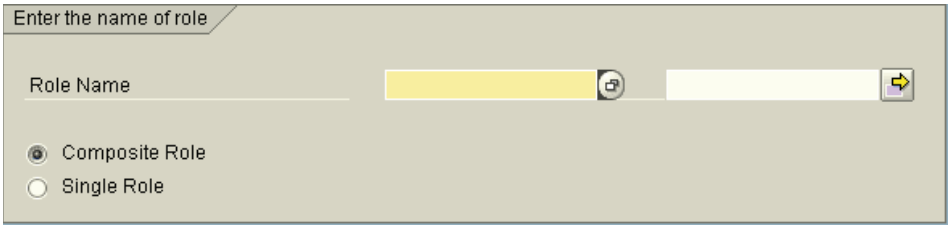


Figure 40 Roles/Composite Roles Relationship Form

Composite Role	Single Role
HCOMPOSITE1	Z_AP_PAYABLE Z_AP_SUPERVISOR

Figure 41 Roles/Composite Roles Relationship Report for Composite Roles

Single Role	Composite Role
Z_AP_SUPERVISOR	BNNNCOMP GCOMPOSITE HCOMPOSITE1 HK_ROLE3 NEWOLDCOMPOSITE NNEWNNEW NNNCOMP RAVI_ROLE900 ZTERMINATORCOMP1

Figure 42 Roles/Composite Roles Relationship Report for Single Roles

List Roles and Transactions

This report lists all the transactions for a specified Role. If you select the **Expand Transaction Range** check box, any transactions with a wildcard (for example A*) are expanded to display all transactions beginning with 'A'.

The report is also downloaded to a tab-delimited text file.

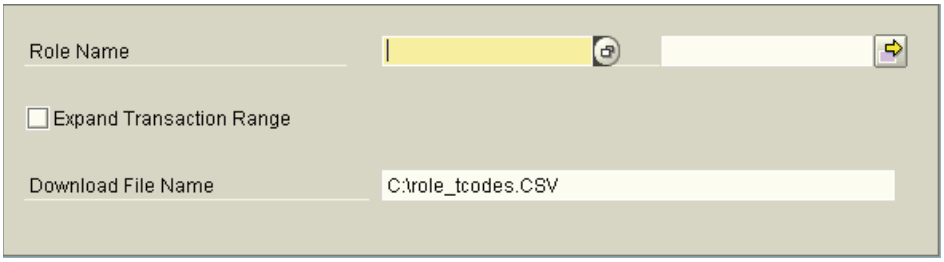


Figure 43 List Roles and Transactions Form

Composite Role	Single Role	Role Title
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	
No Composite role associated	RAVI_ROLE1	

Profile	Transaction Code	Transaction Text
T-V3362000	AB*	
T-V3362000	CK68	Release Costing Run
T-V3362000	CMOD	Enhancements
T-V3362000	CO01	Create production order
T-V3362000	F*	Create production order
T-V3362000	FB01	Post Document
T-V3362000	LI11	Enter Inventory Count
T-V3362000	LI21	Clear Inventory Differences in MM-IM
T-V3362000	OBR1	Delete Documents
T-V3362000	SE11	ABAP Dictionary
T-V3362000	SE12	ABAP/4 Dictionary Display
T-V3362000	SE16	Data Browser
T-V3362000	SE38	ABAP Editor
T-V3362000	SU21	Maintain Authorization Objects
T-V3362000	SU24	Auth. Obj. Check Under Transactions

Figure 44 List Roles and Transactions Report

Check Role Status

This report displays a status for each Role specified.

Figure 45 Check Role Status Form

Role	Profile	Profile Status
RAVI_ROLE1	T-V3362000	Authorization profile is generated

User Status	Profile Text
No users are assigned	Profile for role RAVI_ROLE1

Created By	Created On	Changed By	Changed On
RCHUNDURU	03/01/2005	JAVILAN	03/30/2005

Figure 46 Check Role Status Report

Create/Modify Derived Roles

This report displays the SAP Derived Roles.

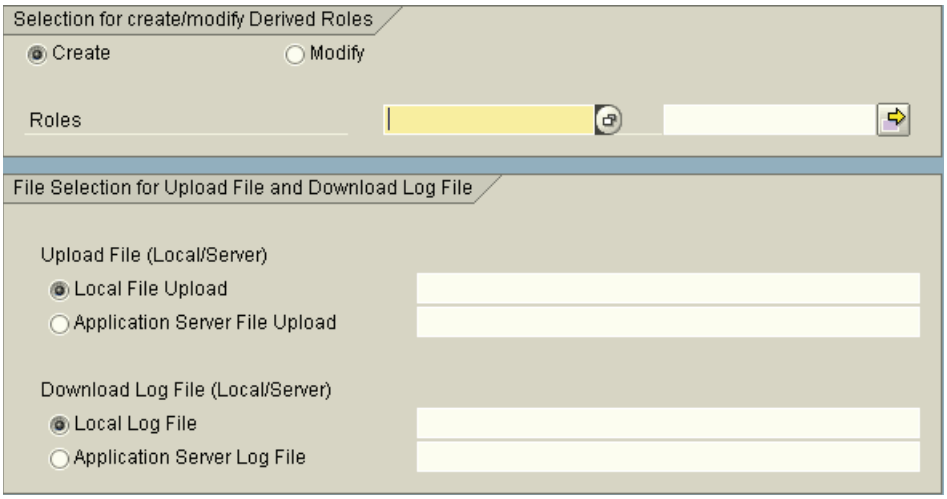


Figure 47 Create/Modify Derived Roles

Field Definitions

- **Selection for create/modify Derived Roles**
  - **Roles**—The **Roles** field is only used when you are modifying an existing Derived Role. Any values in these fields are ignored if you choose the **Create** option. Specifying a Derived Role or range of Derived Roles limits the modification process to those Roles. If any other Derived Roles are in the Derived Role Definition file, they are not used to modify the existing SAP Derived Role.
- **File Selection for Upload File and Download Log File**
  - **Upload File**—This file is the Derived Role Definition file. You must specify the full path name of the file and choose if it is located on your local PC, or on an application server.

Note If you choose to upload from an application server you can run this utility in the background.

  - **Download Log File**—This file stores the Derived Role Generation report. The report information displayed on screen is also saved to this file. You can create the file on your local PC, or on an application server. Specify the full path name of the file.

Derived Role Definition File

The Derived Role Definition file is created in tab-delimited format. You can use a spreadsheet program to create the file. This is the file used in the **Upload File** option above.

If you are using the Derived Role Definition file to create new Derived Role, the following columns of data must be present in the file.

Derived Role Name	Derived Profile Name	Master Role Name	Field Content	Field From Value	Field To Value	User Assignment
Required	Optional Limit = 10 characters	Required	Required	Required	Optional	Optional

A	B	C	D	E	F	G	H	I
SCR_SOD_DERIVE1_TEST		SCR_SOD_MASTER_TEST	WERKS	2	3	SCU_SOD_01		
SCR_SOD_DERIVE1_TEST			SPART	4		SCU_SOD_03		
SCR_SOD_DERIVE1_TEST			LGNUM	7	10			
SCR_SOD_DERIVE1_TEST			WERKS	D				
SCR_SOD_DERIVE2_TEST	Test_Prof2	SCR_SOD_MASTER_TEST	BUKRS	8	14	SCU_SOD_03		
SCR_SOD_DERIVE2_TEST			LGNUM	4				
SCR_SOD_DERIVE3_TEST	Test_Prof3	SCR_SOD_MASTER_TEST	BUKRS	0		SCU_SOD_04		
SCR_SOD_DERIVE3_TEST			VKORG	K		SCU_SOD_05		
SCR_SOD_DERIVE4_TEST		SCR_SOD_MASTER_TEST	VTWEG	6	8	SCU_SOD_05		
SCR_SOD_DERIVE4_TEST			KOKRS	C	F	SCU_SOD_02		
SCR_SOD_DERIVE4_TEST			SPART	89				

Figure 48 Example of Derived Role Definition File for Creating Roles

If you are using the Derived Role Definition file to modify existing Derived Roles, the following columns of data must be present in the file.

Derived Role Name	Derived Profile Name	Master Role Name	Field Content	Field From Value	Field To Value	User Assignment	Modification Field	Modification Value
Required	Optional	Required	Required	Required	Optional	Optional	Required Field values are: A—Add D—Delete C—Change	Required

A	B	C	D	E	F	G	H	I	J
SCR_SOD_DERIVE2			LGNUM	4			A	6	
SCR_SOD_DERIVE3			BUKRS	0			D	0	
SCR_SOD_DERIVE4			VKORG	K			C	Z	

Figure 49 Example of Derived Role Definition File for Modifying Roles

Record and Field Assumptions

- All the **Field To** values and **Field From** values are in ascending order.
- No blank rows are allowed in the tab-delimited file.
- All records required for the creation of Derived Roles should be placed as a single block. If you are using the Derived Role Definition file for creating and modifying the Derived Roles, make sure all the records for creating new Derived Roles are grouped together, and there are no records for modifying Roles interspersed within the group.
- The Master Role Name should be specified in the first record corresponding to that particular Role data.
- If a profile name is specified, it should be placed in the first record for that particular role data. Profile name is also optional, which can be created by the system.
- During modification runtime, modification fields that are specified will be selected as field values.
- During modification, the **Modification** field assumes the value previously assigned to the **Field From** value during change operation.
- Role Expert does not analyze the current operations to be performed in the current modification process.

Viewing the Derived Roles Report

The Derived Roles report is displayed on screen. It is also saved to a text file if you have specified the path name for the file in **Download Log File** field.

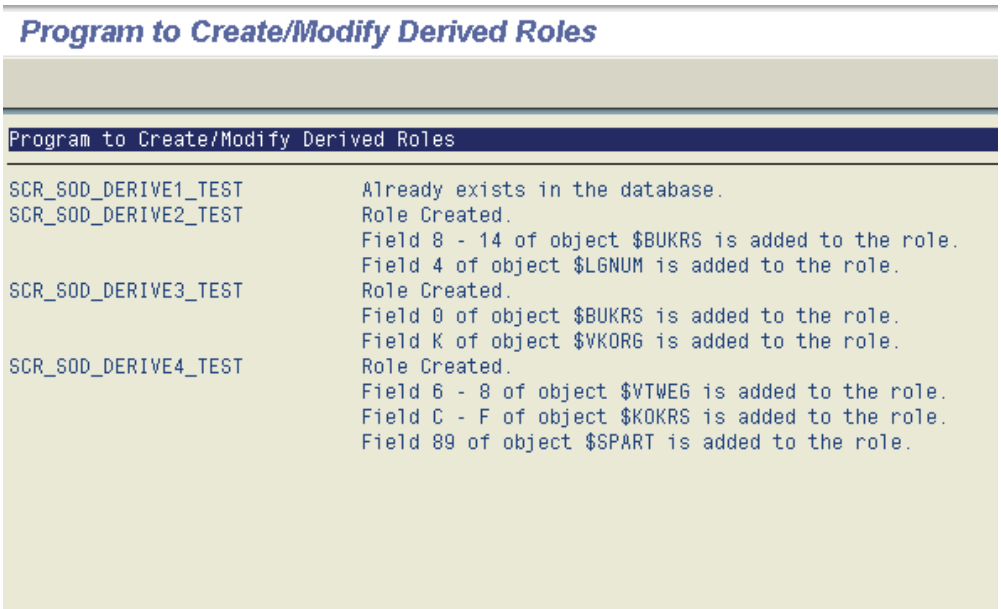


Figure 50 Derived Roles Report On Screen

	A	B	C
1	SCR_SOD_DERIVE1_TEST	Already exists in the database.	
2	SCR_SOD_DERIVE2_TEST	Role Created.	
3		Field 8 - 14 of object $BUKRS is added to the role.	
4		Field 4 of object $LGNUM is added to the role.	
5	SCR_SOD_DERIVE3_TEST	Role Created.	
6		Field 0 of object $BUKRS is added to the role.	
7		Field K of object $VKORG is added to the role.	
8	SCR_SOD_DERIVE4_TEST	Role Created.	
9		Field 6 - 8 of object $VTWEG is added to the role.	
10		Field C - F of object $KOKRS is added to the role.	
11		Field 89 of object $SPART is added to the role.	
12			

Figure 51 Derived Roles Report Saved to a File

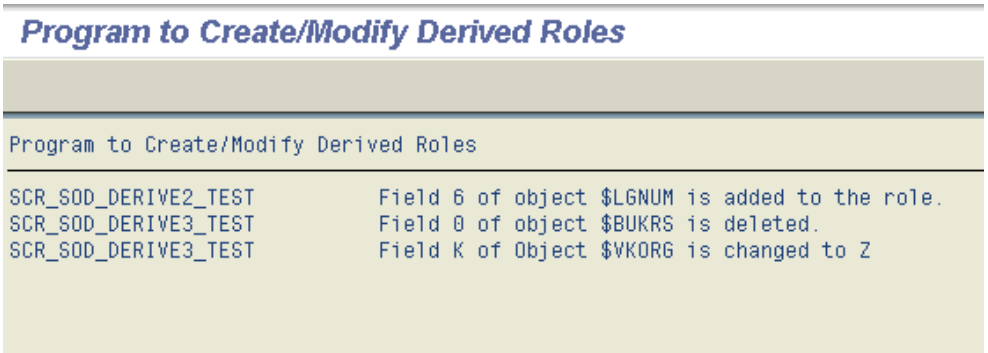


Figure 52 Derived Roles Report When Modifying Roles

Count Authorizations in Roles

This report displays the number of authorizations for the specified Role.

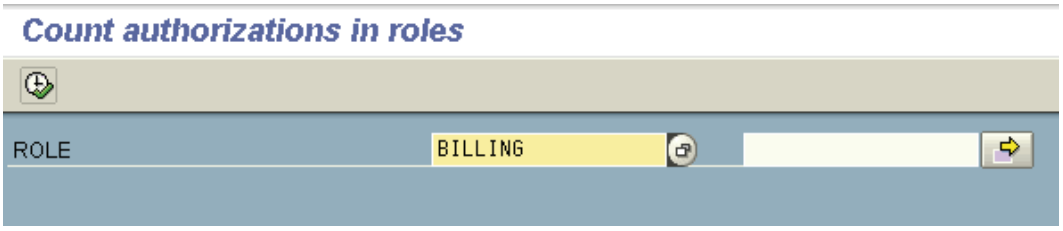


Figure 53 Count Authorizations in Roles Form

Report Run By:	JAVILAN
Date:	04/08/2005
Time:	13:11:00
System:	VD3
Client No.:	100

Role Name	No. of authorizations
RAVI_ROLE1	20

Total No. of Roles	1
Average Authorizations Per Role	20

***** End of Report *****

Figure 54 Count Authorizations in Roles Report

Analysis of Owners Roles and Users

This report lists the Role Owner for each Role specified, and the User IDs assigned to the Role.

Selection Criteria

Owner Name		to	
Role		to	

☐ Include Roles With No Owners

Figure 55 Analysis of Owners Roles and Users Form

Owner	Role	User
BBEHERA	MATST_002	BBEHERA
BBEHERA	MATST_002	TEST_AMD_101
BBEHERA	MATST_002	TEST_AMD_101
BBEHERA	MATST_002	TEST_AMD_102

Figure 56 Analysis of Owners Roles and Users Report

Count Authorizations for Users

This report displays the number of authorizations for each User specified.

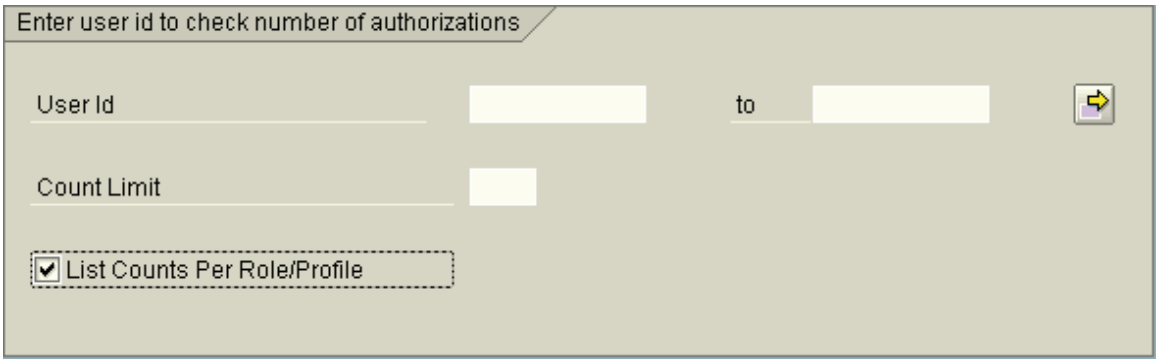
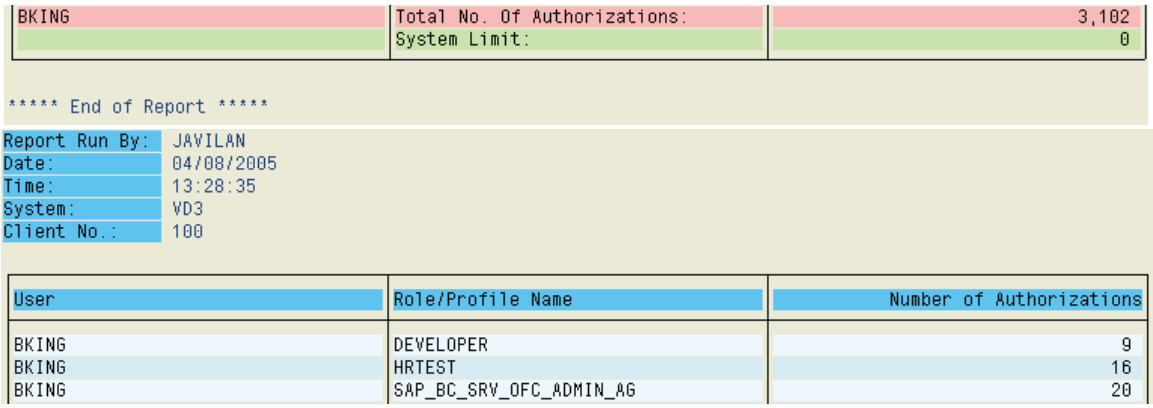


Figure 57 Count Authorizations for Users Form



BKING	Total No. Of Authorizations:	3,102
	System Limit:	0

***** End of Report *****

Report Run By:	JAVILAN
Date:	04/08/2005
Time:	13:28:35
System:	VD3
Client No.:	100

User	Role/Profile Name	Number of Authorizations
BKING	DEVELOPER	9
BKING	HRTEST	16
BKING	SAP_BC_SRV_OFC_ADMIN_AG	20

Figure 58 Count Authorizations for Users Report

Identify Transactions Executed by User(s)

This report specifies which transactions have been executed within a given time period.

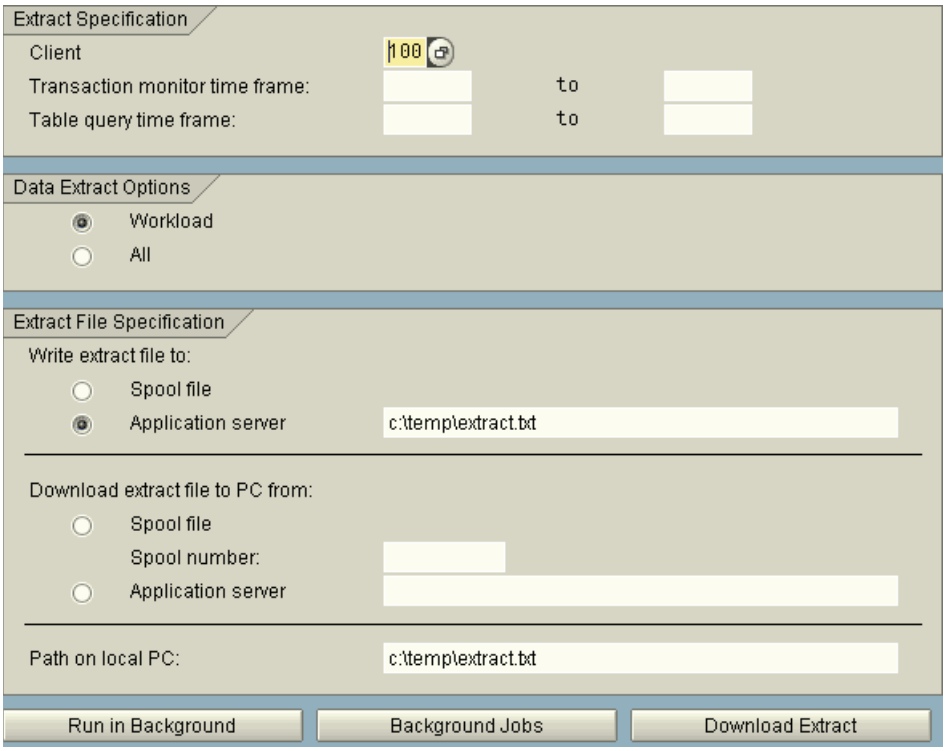


Figure 59 Transactions Executed by Users Form

Field Definitions

- **Extract Specification**
  - **Client**—From the pop-up menu, choose the system you want to run the report on.
  - **Transaction monitor time frame**—Specify the time frame you want to include in the report. Only those transactions executed within the time frame are included in the report.
  - **Table query time frame**—These fields are filled in automatically.

- **Extract File Specification**
  - **Spool file**—Specifying a spool file allows the report to be displayed onscreen.
  - **Application server**—Specifying this option creates the report within a text file.
  - **Download extract file to PC from**—This option is used after you have generated the report. It copies the generated report to your local PC. If you have created the report using the **Spool File** option, specify the spool file number. If you have created the report using the **Application Server** option, specify the path name of the generated report file.
  - **Path on local PC**—This is the path name of the file to be created. Use the **Download Extract** button to create the file to your local PC.

5

Configuration Options

Topics covered in this appendix

Configuration Options

Role Expert has various options that allow you to use Role Expert more efficiently.

You set the following configuration options by clicking the **Config** button on the **Initial** page toolbar.

Critical Level

This option specifies the **Critical Level** values for a Role. You can create multiple iterations of this option. Each iteration adds a value to the **Critical Level** pop-up menu in the **Role Definition Form** page.

Module Name

This option specifies the **Module Name** values for a Role. You can create multiple iterations of this option. Each iteration adds a value to the **Module Name** pop-up menu in the **Role Definition Form** page.

The module name parameter is used to configure all the SAP modules used in your implementation, such as SD, MM, FI/CO, and so on. You can also define your own modules such as OTC (Order To Cash), PUR (Purchasing), and so on.

Role Status

This option specifies the **Role Status** values for a Role. You can create multiple iterations of this option. Each iteration adds a value to the **Role Status** pop-up menu in the **Role Definition Form** page.

Org Level Restrictions

This option specifies the **Organization Level** values for a Role. You can create multiple iterations of this option. Each iteration adds a value to the **Org Level** pop-up menu in the **Role Definition Form** page.

Create Role with Org. Levels * ?

This option automatically adds '*' to any Organizational Level fields existing in the SAP Role. If you set the option to 'Y', clicking the **Generate** button automatically adds the wildcard. If the option is set to 'N' the Organizational Level values are not changed.

Create Role with Org. Levels Popup?

Setting this option to 'Y' displays the Organizational Level pop-up when you generate the Role.

> **Note** This option is ignored if you set the **Create Role with Org. Levels** option to YES.

Create Role with * in Un-maintained Fields

This option is applicable only to the **Generate** button. You can ignore this option if you are not using Role Expert to generate roles in SAP.

If you select 'Y', Role Expert resolves all open authorizations by assigning the value '*' (full authorizations). If you select 'N', Role Expert leaves the authorization open.

Update Role Descriptions in PFCG

If this option is set to YES, the information in the short and full description fields from Role Expert are transferred to the SAP Role.

Ticket Maintenance

This new configuration option determines if the **Add Ticket No.** and **Delete Ticket No.** columns appear in the Transactions table.

Data Source for Role Owners

This option affects the data entry in the **Local Role Owner** and **Global Role Owner** fields.

The values for this option are [`SAP/MANUAL`].

- Setting the option value to Manual allows free-text entry in the fields.
- Setting the option value to Manual also means a value is required in both fields. You cannot leave the fields blank.
- Setting the option value to SAP limits the field values to known User IDs.
- Setting the option value to SAP also validates the User ID against the SU01 validity period.
- With the option value set to SAP, you can leave the **Local Role Owner** and **Global Role Owner** fields blank.

6

Installation and Setup

Topics covered in this appendix

Installation and Setup

Role Expert is an ABAP-based tool and is delivered to the customer as a group of transport files, a conventional method for all add-on SAP software.

Please consult your Basis Administrator to install Role Expert in your system. To install Role Expert you simply need to import the Role Expert transport files into your system, just like you import any custom ABAPs or SAP delivered code.

Refer to OSS Note 13719 for more details on this procedure.

Role Expert has a tight naming space but if you run into any name space conflicts, please contact Virsa Global Support Services to resolve these conflicts (see section "Contacting Virsa Systems" on page 10 in the Preface).

In case there are errors during the import of the transport files, please e-mail the errors to Virsa or contact Virsa Global Support Services.

Role Expert is designed to be used by the Security Administrators and Business Process (Role) Owners. You can provide different access levels for Role Expert functionality, for example, you may not want to allow everyone to update role definitions or to upload role definitions. This section describes how to upload and customize the Role Expert role definitions to meet your requirements.

Upgrading Role Expert

You should perform the following steps before upgrading to a newer version of Role Expert:

1. Download all your role definitions and configuration data information.
2. Perform the upgrade.
3. Upload role definitions and configuration data back into Role Expert.

Upload Role Definitions for Role Expert Users

Virsa Systems provides pre-delivered roles for all the Role Expert users mentioned above. You can customize these roles according to your naming conventions and needs. The following are the names and intended users of the pre-delivered Role Expert roles.

Role Name	Intended Users
Z_VRMT_ADMINISTRATOR	Role Expert Administrator (Super User)
Z_VRMT_ROLE_OWNER	ROLE Owners
Z_VRMT_SECURITY	Security Administrators
Z_VRMT_USER	Role Expert User

▶ **To upload these roles into your system:**

1. Run transaction **PFCG.**
2. From the menu, select **Activity Group → Upload**. You will get a standard information message about uploading activity groups. Click **Enter** and you will be prompted for a filename.
3. Select the **file/folder** that contains the Role Expert User Roles.
4. Click **Open**.

   The system will display the list of Roles (Activity Groups) to be loaded. This list should contain the role names listed above.
5. If the list is correct, click **Enter**. The roles will be uploaded in the system.
6. Display the roles in the **PFCG** transaction, to confirm that they have been uploaded successfully.

Customizing Role Expert Role Definitions

You can customize the User Role Definitions in Role Expert according to your requirements and naming standards.

Conformance to Naming Standards

▶ **To customize the names of the Role Expert roles to your naming convention:**

1. Run transaction **PFCG.** Enter the Role Expert role name (for example, Z_VRMT_USER).
2. Click **<Copy>** and specify the destination Role.
3. Click **<Copy All>**. The role should be copied to the new name.
4. Generate the role to make sure that the related authorizations are created.
5. Repeat Step 1 through Step 4 for all the other Role Expert roles.

Customizing Role Authorizations

For customizing the authorizations of the roles, please consult your Security Administrator. Role Expert authorization object documentation specifies the significance of each object and field, to help you customize the authorizations of Role Expert Roles. The documentation can be found in the online help window.

Assigning Role Expert Roles

Assign the Role Expert Roles to the intended users of Role Expert using transaction **SU01** (or ask your User Administrator to do that for you). Role Expert roles assume that the users already have the basic access required for the SAP system, for example, access to printing, **SU53** transaction, and so on.

7

Maintaining Critical Transactions Offline

Topics covered in this appendix

Critical Transactions

Critical Transactions are transactions that are critical by themselves, for example, **SE38**, **SA38**, **SM30**, and so on.

Use the **Utilities** > **Maintain Tables** > **Critical Transactions** table to modify your Critical Transaction records. Role Expert's Critical Transactions table uses standard SAP features for adding and modifying table records.

Note Role Expert and Compliance Calibrator share critical transaction data. Making changes in either application's Critical Transactions table updates the other. Only Compliance Calibrator 4.0 supports Critical Transaction Risk IDs. If you have an earlier version of Compliance Calibrator installed, the Risk ID column will not appear in the Role Expert Critical Transactions table.

Uploading/Downloading Role Definitions

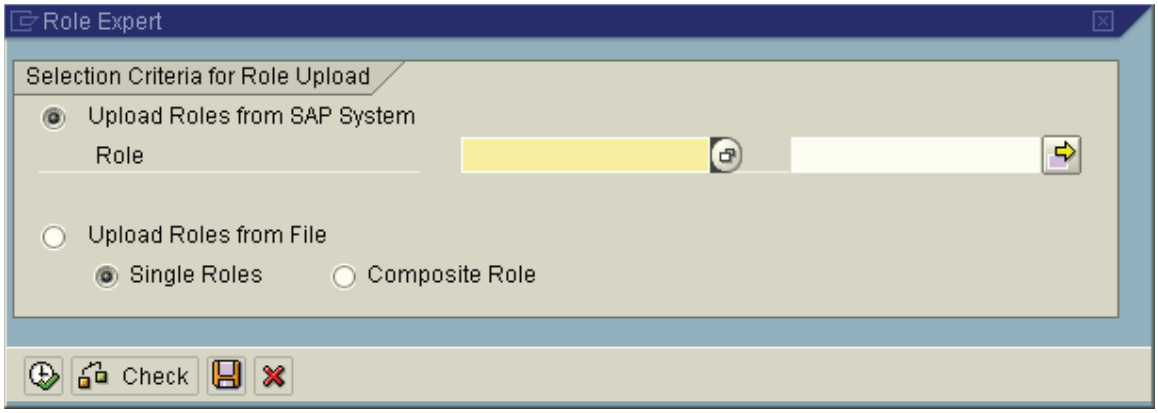


Figure 60 Uploading Role Definitions

Tab-Delimited Text File Format for Single Roles

When you download your Role definitions, you should create a tab-delimited text file. When you upload your Role definitions, the file must be in the same format as well. If there is no value for a particular field, leave the field blank.

The columns of data for a Single Role are:

- Role type*, Role name, Role description, role primary owner, role secondary owner, critical level, module name, role status, Project name, Org. unit 1, Org. Unit 2, Org. unit 3, Org. unit 4, Org. unit 5, Org. Unit 6, Transaction Code, Transaction code description, user id of the user inserting the TCode, authorization details 1, authorization details 2, authorization details 3, remarks 1, remarks 2, remarks 3, details about role description, details about sod records, details about role history, details about testing, and so on.

Note *The Role Type must be "S".

Tab-Delimited Text File Format for Composite Roles

When you download your Role definitions, you should create a tab-delimited text file. When you upload your Role definitions, the file must be in the same format as well. If there is no value for a particular field, leave the field blank.

The columns of data for a Composite Role are:

- Composite role name, Role type*, Role name, Role description, role primary owner, role secondary owner, critical level, module name, role status, Project name, Org. unit 1, Org. Unit 2, Org. unit 3, Org. unit 4, Org. unit 5, Org. Unit 6, Transaction Code, Transaction code description, user id of the user inserting the TCode, authorization details 1, authorization details 2, authorization details 3, remarks 1, remarks 2, remarks 3, details about role description, details about sod records, details about role history, details about testing, and so on.

Note *The Role Type must be "C".

8

Maintaining Role Expert Roles Offline

Topics covered in this appendix

Role Definitions

It is important to take frequent backups of your Role definitions in the Role Expert role database, to ensure that you always have a good copy of role definitions in case your role definitions are lost or damaged for some reasons, for example, as a result of uploading roles from a wrong file.

You can upload your existing role definitions to Role Expert from a spreadsheet, or from roles currently existing in your SAP system. To upload a role or a group of roles, click the **Upload** button.

Uploading/Downloading Role Definitions

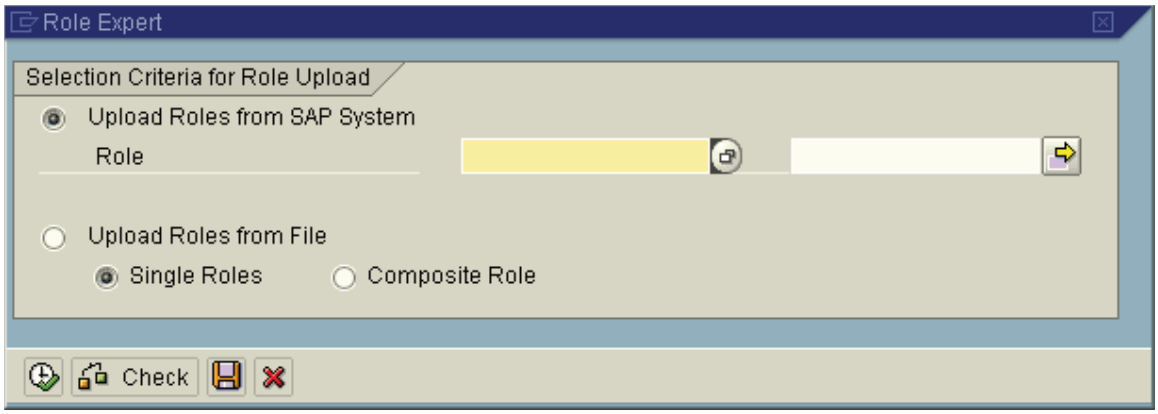


Figure 61 Uploading Role Definitions

Tab-Delimited Text File Format for Single Roles

When you download your Role definitions, you should create a tab-delimited text file. When you upload your Role definitions, the file must be in the same format as well. If there is no value for a particular field, leave the field blank.

The columns of data for a Single Role are:

- Role type*, Role name, Role description, role primary owner, role secondary owner, critical level, module name, role status, Project name, Org. unit 1, Org. Unit 2, Org. unit 3, Org. unit 4, Org. unit 5, Org. Unit 6, Transaction Code, Transaction code description, user id of the user inserting the TCode, authorization details 1, authorization details 2, authorization details 3, remarks 1, remarks 2, remarks 3, details about role description, details about sod records, details about role history, details about testing, and so on.

Note *The Role Type must be “S”.

Tab-Delimited Text File Format for Composite Roles

When you download your Role definitions, you should create a tab-delimited text file. When you upload your Role definitions, the file must be in the same format as well. If there is no value for a particular field, leave the field blank.

The columns of data for a Composite Role are:

- Composite role name, Role type*, Role name, Role description, role primary owner, role secondary owner, critical level, module name, role status, Project name, Org. unit 1, Org. Unit 2, Org. unit 3, Org. unit 4, Org. unit 5, Org. Unit 6, Transaction Code, Transaction code description, user id of the user inserting the TCode, authorization details 1, authorization details 2, authorization details 3, remarks 1, remarks 2, remarks 3, details about role description, details about sod records, details about role history, details about testing, and so on.

Note *The Role Type must be “C”.