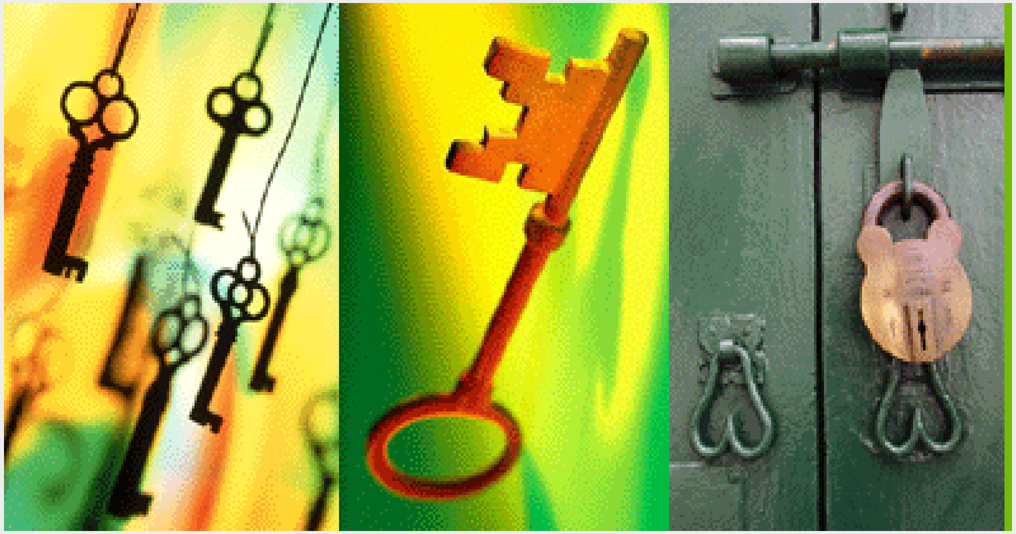
SAP BW

Lesson 10: Security Components

Security Components in BI



Security Components in BI

1 Security Components in BI

2 Securing Data Access for Reporting Users

3 How to Save BEx Objects to BI Roles

4 How to Secure Data Access for Administration Users

5 Maintaining Authorizations

1. Security Components in BI

- ➢Objectives:
- ➢Describe security needs in an OLTP environment.
- ➢Describe security needs in an OLAP environment.
- ➢Explain the differences in security approaches for OLTP versus OLAP.
- ➢Describe how authorization objects are used for security.
- ➢Describe BI authorization objects and what the BI authorization objects protect.
- ➢Explain when BI authorization object should be used.

Security Needs in mySAP. ERP (OLTP)

➢Transaction codes

➢Specific field values

➢Which activities a user can perform

➢OLTP focuses on getting the daily work of the business completed as quickly and efficiently as possible. People only need access to the specific functions they perform in this daily work.

Security Needs in BI (OLAP)

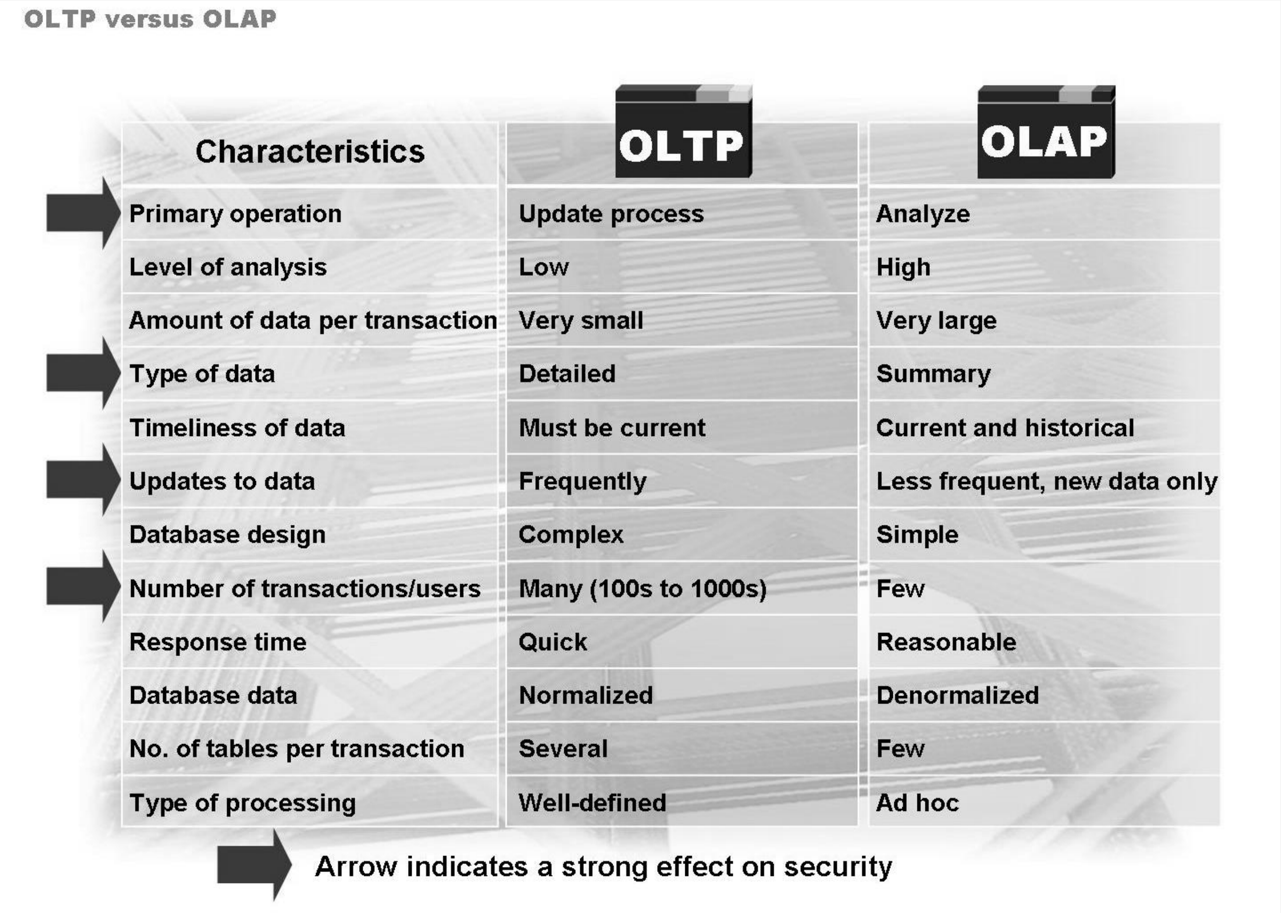
- InfoAreas

- InfoProvider (InfoCube, DataStore Objects)

- Queries

- BI is focused on what data a user can access. This may be controlled at the field level, or it may be controlled at the InfoProvider level. The InfoProvider is a category of objects that can provide data to a query, such as InfoCubes and DataStore Objects. The InfoCube or DataStore Object holds the summarized data that the user can then analyze. Query results are based on the data in the InfoProvider.

Comparison of OLTP and OLAP Security Needs



OLTP versus OLAP

	Characteristics	OLTP	OLAP
➡	Primary operation	Update process	Analyze
	Level of analysis	Low	High
	Amount of data per transaction	Very small	Very large
➡	Type of data	Detailed	Summary
	Timeliness of data	Must be current	Current and historical
➡	Updates to data	Frequently	Less frequent, new data only
	Database design	Complex	Simple
➡	Number of transactions/users	Many (100s to 1000s)	Few
	Response time	Quick	Reasonable
	Database data	Normalized	Denormalized
	No. of tables per transaction	Several	Few
	Type of processing	Well-defined	Ad hoc

➡ Arrow indicates a strong effect on security

Authorizations in BI

➢ Overview

➢There are two major types of authorizations in BI. One type focuses on Administrative users and another type focuses on Reporting users. Authorizations for Administrative users in many ways parallel mySAP ERP security, but securing BI reporting users is much different. Because the security concept for Reporting users is much more complicated, a different concept and special tools are required..

➢Lesson Objectives

- Describe how authorization objects are used for security.
- Describe BI authorization objects and what the BI authorization objects protect.
- Explain when BI authorization object should be used.

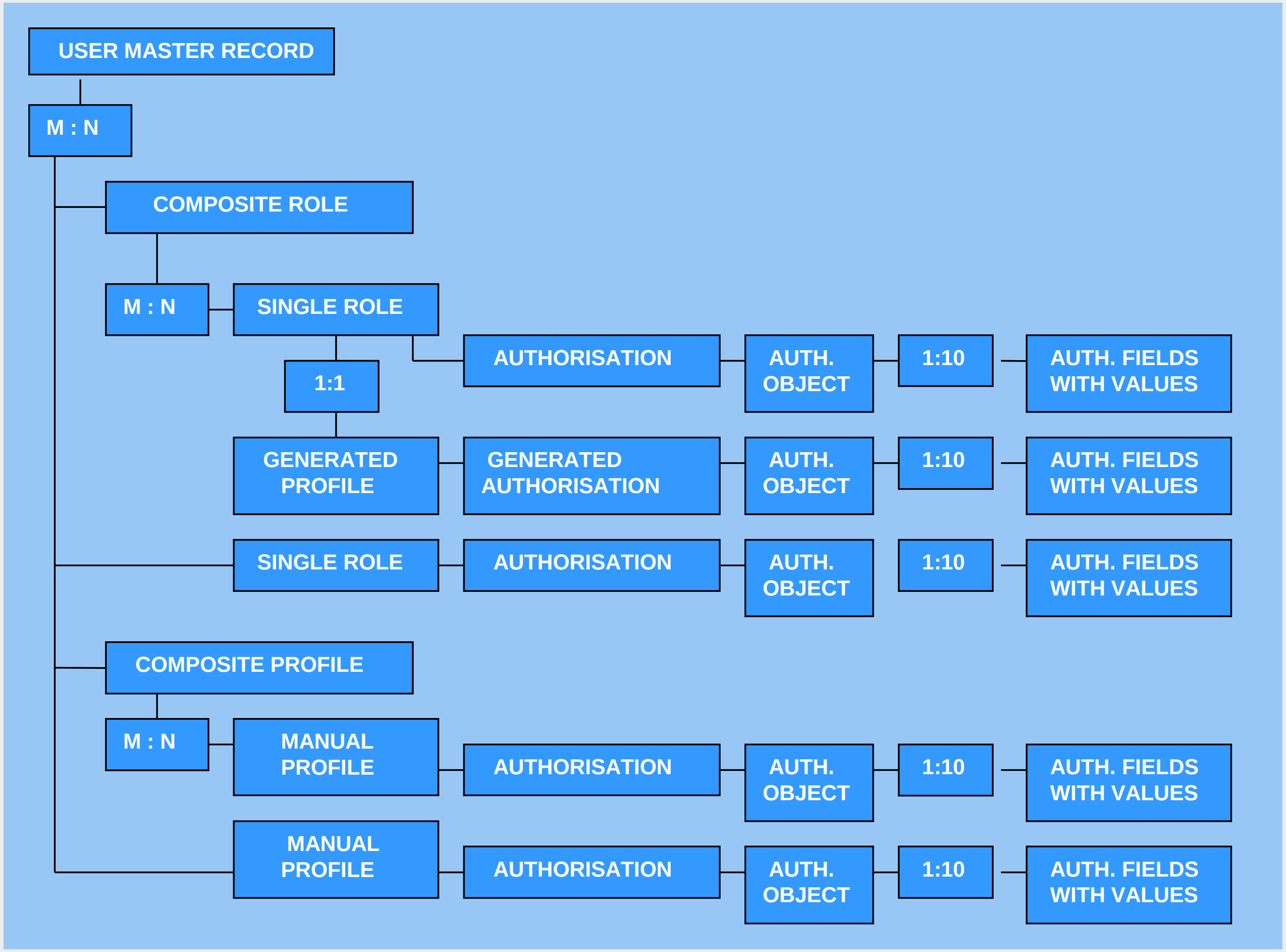
SAP Authorization Concept

➢Involves protecting transactions, specific field values, programs, and services in SAP systems from unauthorized access.

➢On the basis of the authorization concept, administrator assigns authorizations to the users that determine which actions a user can execute in the SAP System.

➢The authorizations represent instances of generic authorization objects and are defined depending on the activity and responsibilities of the employee. The authorizations are combined in an authorization profile that is associated with a role.

SAP Authorization Concept



BI Authorization Concept

➢Primary activities in BI are:

- Displaying Data
- Analyzing Result

➢Primary BI Security focus is on:

- Info area
- Info provider (For e.g. Info cube, Data store Object)
- Queries

➢Two types of Authorizations Supported in SAP Net weaver '04:

- 1)Standard Authorization : Focused on Administrative users
- 2)Analysis Authorization : Focused on Report Users

BI 7.0 Authorization Types

➢1. Standard authorizations

➢Allow Users to perform administration tasks and ability to change/delete/create meta data objects like Info cube, DSO in BW.

➢Based on standard structures provided by SAP i.e. preconfigured ‘authorization objects’ are provided by SAP. Individual authorization objects are grouped into ‘roles'. The authorizations are then entered into individual users’ master records in the form of ‘profiles’.

➢Transaction PFCG is used to assign authorization objects to roles and flag relevant InfoProviders.

➢Eg: S_RS_COMP, S_RS_COMP1, S_RS_FOLD.

Authorization – 0BI_ALL

- ➢Automatically generated and not changeable.

- ➢Grants authorization for all values of all authorization-relevant characteristics.

- ➢Adjusted whenever a new Infoobject is set to authorization-relevant.

- ➢A user that has a profile with authorization object S_RS_AUTH and has entered 0BI_ALL would have complete access to all data.

Standard authorization Set Up

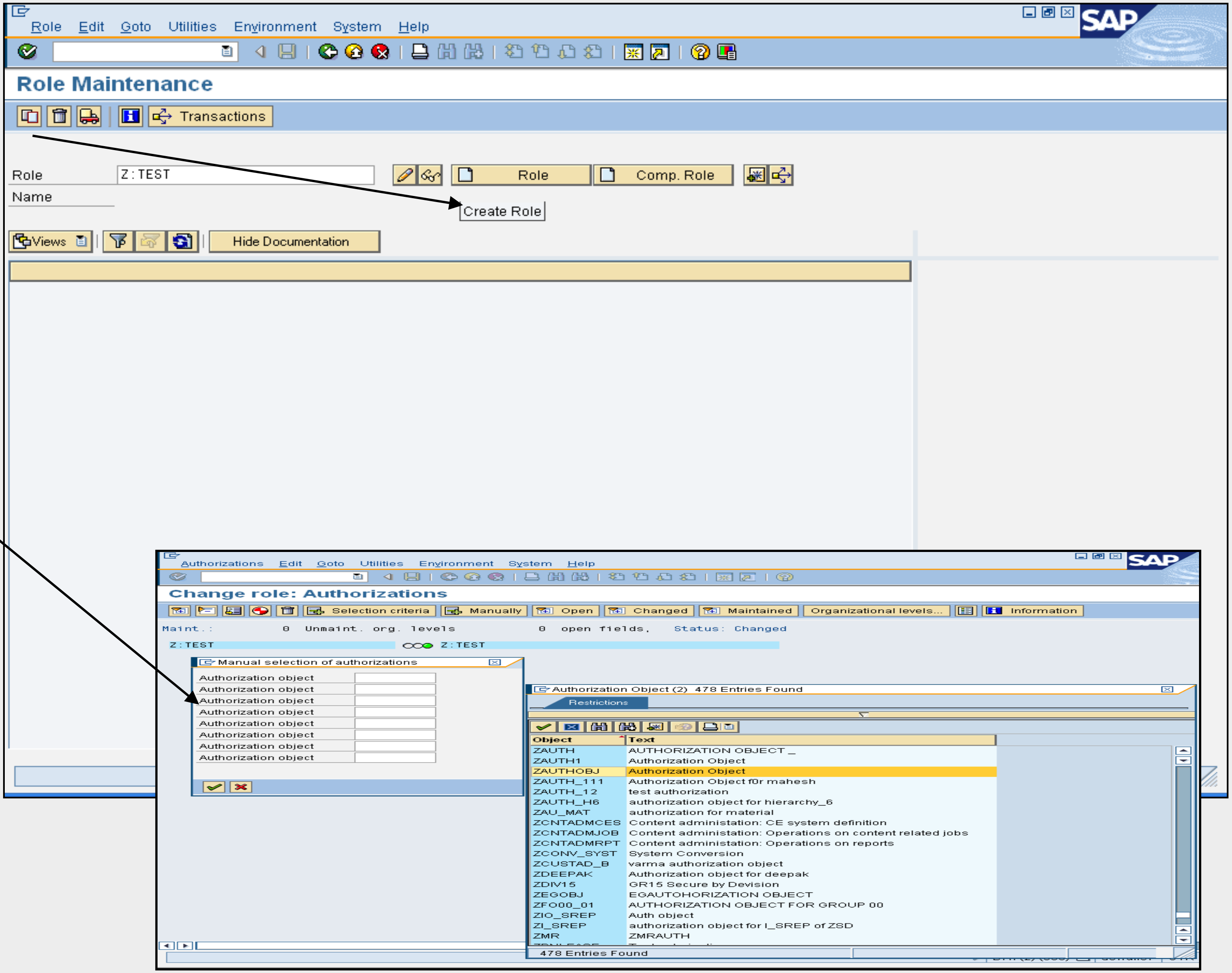
➢Steps in Brief

- Create a ‘Role’ using the transaction PFCG.
- Assign the ‘Standard Authorization object’ to the ‘Role’.

Standard Authorization Set Up

Step 1 : Create a ‘Role’ using the transaction PFCG

Step 2: Assign the Authorization object to the role.



Role Z:TEST

Name

Maint.: 0 Unmaint. org. levels 0 open fields, Status: Changed

Z:TEST Z:TEST

Authorization object
Authorization object
Authorization object
Authorization object
Authorization object
Authorization object
Authorization object
Authorization object

Authorization Object (2) 478 Entries Found

Object	Text
ZAUTH	AUTHORIZATION OBJECT _
ZAUTH1	Authorization Object
ZAUTHOBJ	Authorization Object
ZAUTH_111	Authorization Object f0r mahesh
ZAUTH_12	test authorization
ZAUTH_H6	authorization object for hierarchy_6
ZAU_MAT	authorization for material
ZCNTADMCES	Content administation: CE system definition
ZCNTADMJOB	Content administation: Operations on content related jobs
ZCNTADMRPT	Content administation: Operations on reports
ZCONV_SYST	System Conversion
ZCUSTAD_B	varma authorization object
ZDEEPAK	Authorization object for deepak
ZDIV15	GR15 Secure by Devision
ZEGOBJ	EGAUTOHORIZATION OBJECT
ZFO00_01	AUTHORIZATION OBJECT FOR GROUP 00
ZIO_SREP	Auth object
ZI_SREP	authorization object for I_SREP of ZSD
ZMR	ZMRAUTH

478 Entries Found

BI 7.0 Authorization Types

➢2. Analysis Authorizations.

➢All users who want to display transaction data from authorization-relevant characteristics or navigation attributes in a query require analysis authorization. This type of authorization is not based on the standard authorization concept of SAP.

➢Instead these authorizations use their own concept that takes the features of reporting & analysis in BI into consideration. Using this analysis authorization concept of BI for the display of query data, critical data is protected in a better way.

➢Transactions : RSECADMIN and PFCG are used to assign auth objects to users or roles and specify relevant InfoProviders. Authorization Object S_RS_AUTH is assigned to roles or users.

2. Securing Data Access for Reporting Users

➢Objectives

- Analysis Authorization.
- Securing Data Access for Reporting Users.
- How to Use BI-Specific Authorization Values.
- Defining Security Using Hierarchies.
- Monitoring Analysis Authorizations (Trace Functions).
- Tracing Authorizations

Analysis Authorizations Options

➢On Characteristic Level

- Restriction of access to all values of a particular characteristic

➢ On Characteristic Value Level

- Restriction of access to certain values of a particular characteristic

➢ On Key Figure Level

- Restriction of access to certain Key Figures
- For using this option, Infoobject 0TCTAKYFNM should be included in ‘authorization’. When 0TCTAKYFNM is flagged as authorization relevant , key-figures are checked for every infoprovider

Analysis Authorizations Options

➢On Info cube Level

- Restriction at Info cube Level

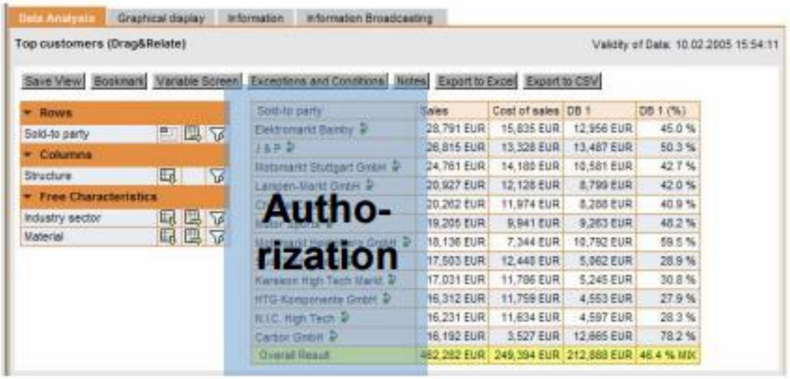
➢ On Hierarchy Node Level

- Restriction of access to certain nodes of a Hierarchy

Authorizations can be defined

- On InfoCube level
- On characteristic level
- On characteristic value level
- On key figure level
- On hierarchy node level

- On characteristic level

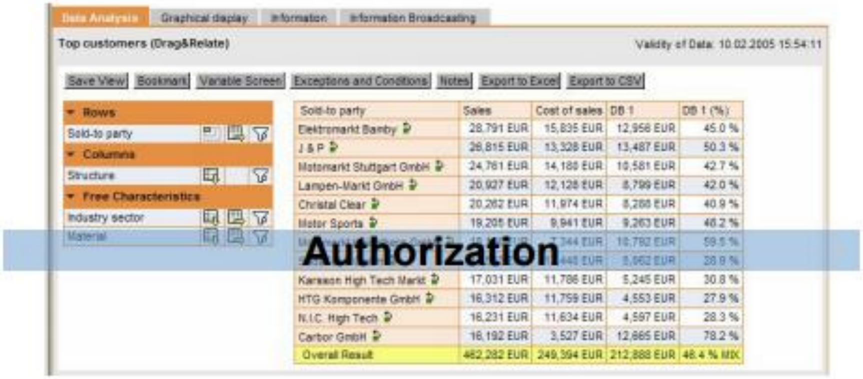


Top customers (Drag&Relate)

Validity of Data: 10.02.2005 15:54:11

Sold-to party	Sales	Cost of sales	DB 1	DB 1 (%)
Elektromarkt Bamby	28,791 EUR	15,835 EUR	12,956 EUR	45.0 %
J & P	26,815 EUR	13,328 EUR	13,487 EUR	50.3 %
Motomarkt Stuttgart GmbH	24,761 EUR	14,180 EUR	10,581 EUR	42.7 %
Lampen-Markt GmbH	20,927 EUR	12,128 EUR	8,799 EUR	42.0 %
[illegible]	20,262 EUR	11,974 EUR	8,288 EUR	40.9 %
Motor Sports	19,205 EUR	9,941 EUR	9,263 EUR	48.2 %
Motomarkt Heidelberg GmbH	18,136 EUR	7,344 EUR	10,792 EUR	59.5 %
[illegible]	17,503 EUR	12,448 EUR	5,062 EUR	28.9 %
Karsson High Tech Markt	17,031 EUR	11,786 EUR	5,245 EUR	30.8 %
HTG Komponente GmbH	16,312 EUR	11,759 EUR	4,553 EUR	27.9 %
N.I.C. High Tech	16,231 EUR	11,634 EUR	4,597 EUR	28.3 %
Carbor GmbH	16,192 EUR	3,527 EUR	12,665 EUR	78.2 %
Overall Result	462,282 EUR	249,394 EUR	212,888 EUR	46.4 % MIX

- On characteristic value level



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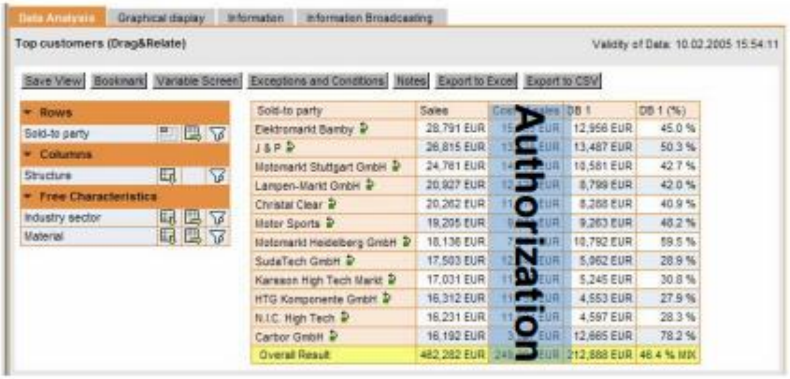
- On key figure level



Top customers (Drag&Relate)

Validity of Data: 10.02.2005 15:54:11

Sold-to party	Sales	[illegible]	DB 1	DB 1 (%)
Elektromarkt Bamby	28,791 EUR	[illegible]	12,956 EUR	45.0 %
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Analysis Authorizations

➢Prerequisites for managing Analysis Authorization:

➢Authorization :

- Authorization object S_RSEC.This which covers all relevant objects with namespace authorizations for specific activities.

➢Activate Three BI Content Characteristics.

➢Activate following 3 objects of the technical BI Content related to authorizations:

- Activity (0TCAACTVT)
- Infoprovider (0TCAIPROV) : For granting authorization to particular infoprovider
- Validity (0TCTAVALID): For granting authorization to specific time period

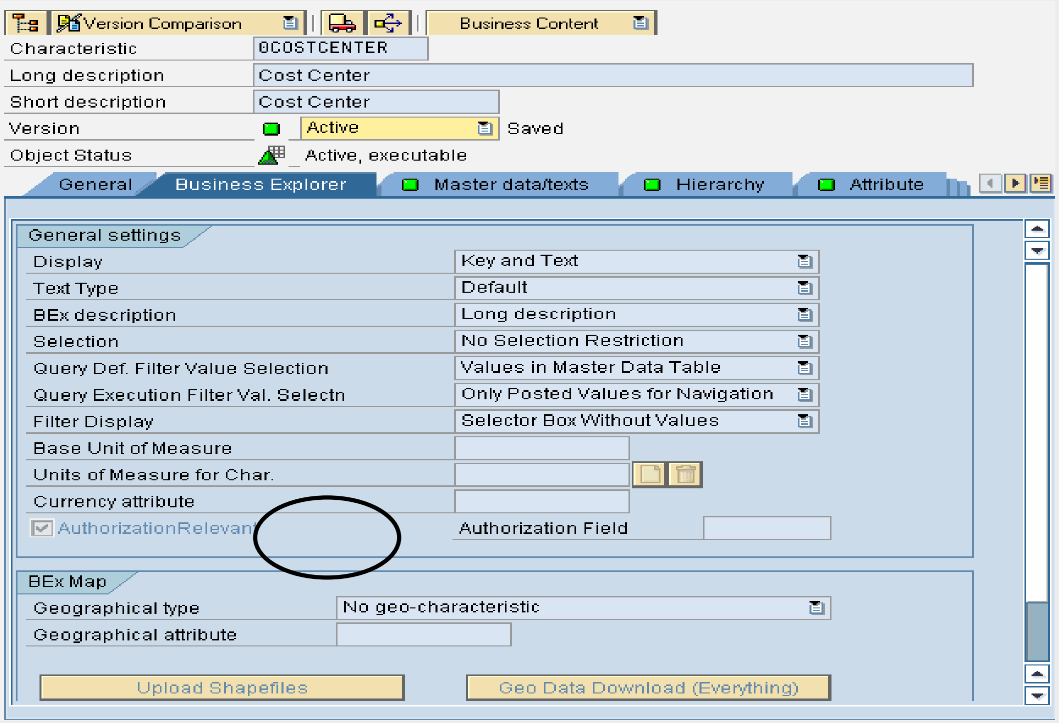
➢They must be assigned to user in atleast one authorization and must not be included in Queries.

Analysis Authorizations

➢Define Characteristics as Authorization Relevant

- Select the following InfoObjects of the technical BI Content to be authorization relevant: 0TCAACTVT, 0TCAIPPROV, 0TCAVALID, and 0TCAKYFNM.

- All characteristics that are to be checked by authorization check should be made authorization relevant. Define the navigation attributes as authorization relevant too if these are to be checked



Characteristic	0COSTCENTER	
Long description	Cost Center	
Short description	Cost Center	
Version	Active	Saved
Object Status	Active, executable	

General settings

Display	Key and Text
Text Type	Default
BEx description	Long description
Selection	No Selection Restriction
Query Def. Filter Value Selection	Values in Master Data Table
Query Execution Filter Val. Selectn	Only Posted Values for Navigation
Filter Display	Selector Box Without Values
Base Unit of Measure	
Units of Measure for Char.	
Currency attribute	
☑ AuthorizationRelevant	Authorization Field

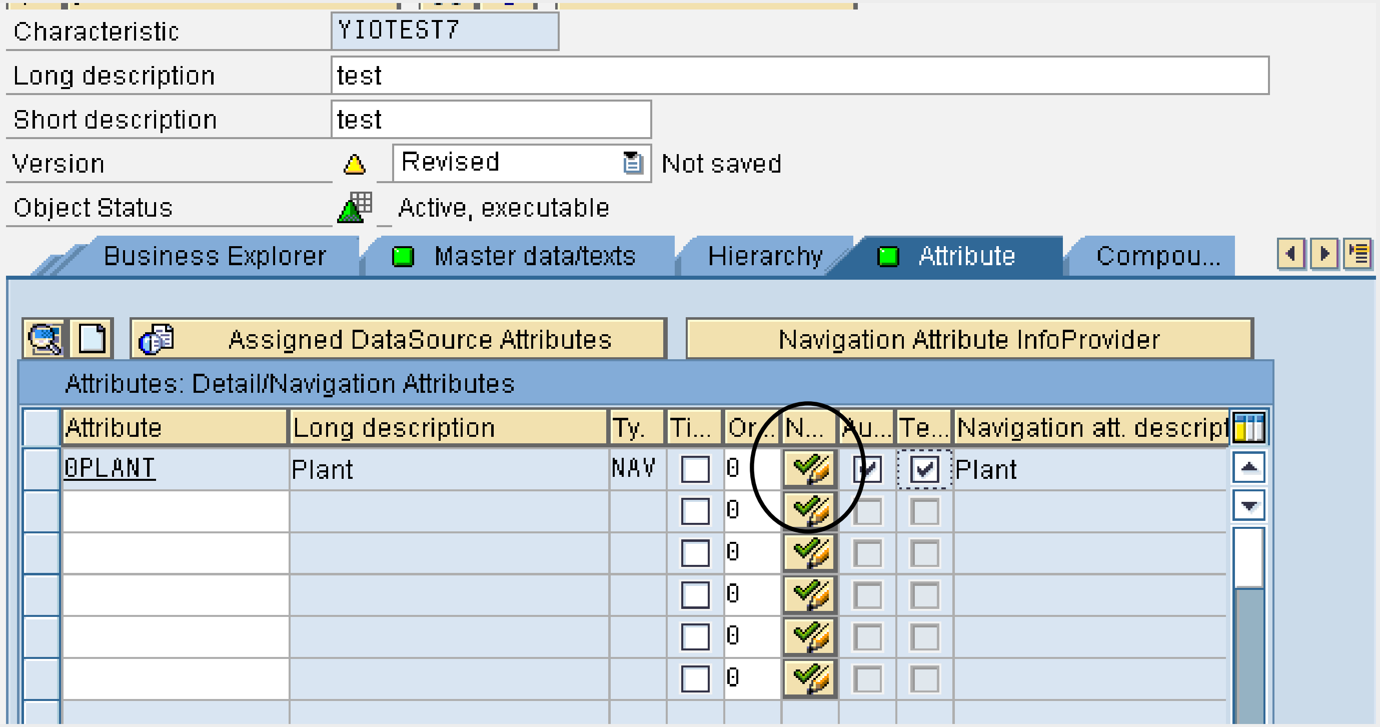
BEx Map

Geographical type	No geo-characteristic
Geographical attribute	

Navigation Attribute - Authorization

➢We can use navigation attributes as authorization objects in BEx.

➢No need to mark the main characteristic as authorization relevant in order to make the navigation attribute as authorization relevant.



Characteristic	YIOTEST7
Long description	test
Short description	test
Version	Revised Not saved
Object Status	Active, executable

Business Explorer
Master data/texts
Hierarchy
Attribute
Compou...
Assigned DataSource Attributes
Navigation Attribute InfoProvider

Attributes: Detail/Navigation Attributes

Attribute	Long description	Ty.	Ti...	Or...	N...	Au...	Te...	Navigation att. descript
0PLANT	Plant	NAV	□	0	✓	☑	☑	Plant
			□	0	✓	□	□	
			□	0	✓	□	□	
			□	0	✓	□	□	
			□	0	✓	□	□	
			□	0	✓	□	□	

Standard vs Analysis Authorization

	Standard Authorization	**Analysis Authorization**
Allows access to	Meta Data objects (Eg. Infocube)	Semantic Data Slices (Eg. Company Code 1000)
Used For	Object maintenance, Data access at high level	Granular access to subsets of data / data slices
Structure Designed by	SAP	Customer

Authorization Objects
- For Data Warehouse Workbench

Authorization Object*	Use
S_RS_ADMWB	for working with Individual Objects of the Data Warehousing Workbench (DWH)
S_RS_ODSO	for working with Datastore Objects and their Subobjects
S_RS_HIER	for working with Hierarchies
S_RS_IOBJ	for working with individual InfoObjects and their subobjects
S_RS_ISNEW	for working with InfoSources (Release > BW 3.x)
S_RS_DS	for working with Datasources (Release > BW 3.x)or its subobjects.
S_RS_ICUBE	for working with InfoCubes and their subobjects
S_RS_ISOUR	for working with InfoSources with flexible updating and their subobjects

* For Complete List ,Refer transactions SU03/SU21 or SAP Help at

http://help.sap.com/saphelp_nw04s/helpdata/en/80/1a6859e07211d2acb80000e829fbfe/content.htm

Authorization Objects- Business Explorer

Authorization Object*	Use
S_RS_COMP	for using different components for the query definition
S_RS_COMP1	for queries from specific owners
S_RS_FOLD	display authorization for folders

* For Complete List ,Refer transactions SU03/SU21 or SAP Help at

http://help.sap.com/saphelp_nw04s/helpdata/en/80/1a6859e07211d2acb80000e829fbfe/content.htm

Reporting User Authorizations

Minimum authorization requirements for Reporting User:

- Analysis Authorization for an infoprovider
- S_RS_COMP (Activities 03, 16)
- S_RS_COMP1 (Query Owner)
- S_RFC (BEx Analyzer or Browser only)
- S_TCODE (RRMX for BEx Analyzer)

In addition if BEx Analyzer tool is used by Reporting user then authorization for objects: S_RFC and S_TCODE with transaction code RRMX also needed.

Steps to Implement InfoObject Security (Field-Level Security)

- ➢1. Define the Info Object as authorization relevant.
- ➢2. Create (or adjust) analysis authorizations for the Info Object.
- ➢3. Assign authorizations to users.
- ➢4. Add a variable to the queries.

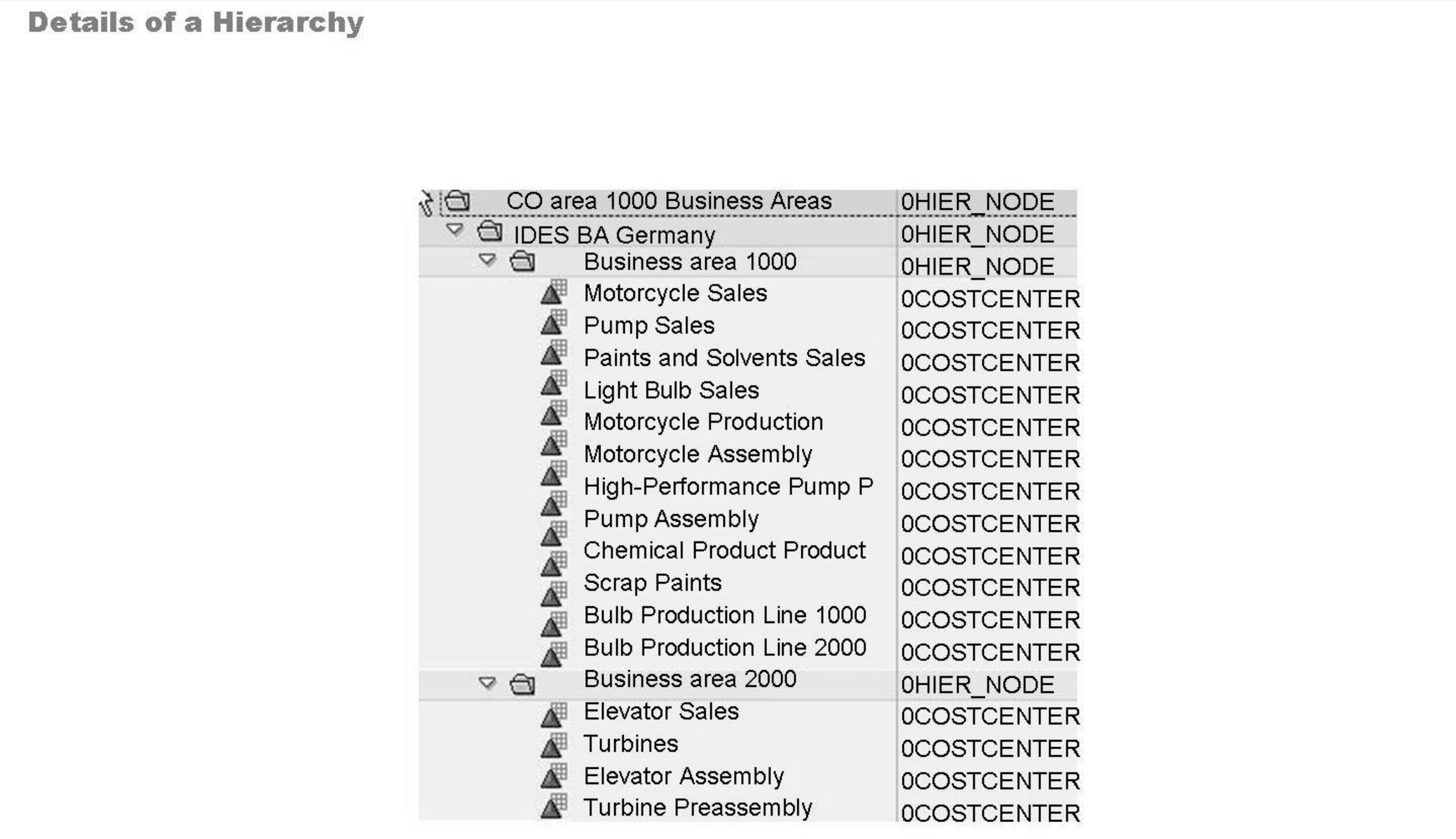
Defining Security Using Hierarchies

- Hierarchies in BI.

- A hierarchy is a method of displaying characteristic values structured and grouped according to individual evaluation criteria. For example, you could easily envision cost centers grouped by country or region, or materials grouped by material type or material group.

- Hierarchies can be created in my SAP ERP and brought over to BI, or they can be created directly in BI.

Cost Center Hierarchy Example



Details of a Hierarchy

CO area 1000 Business Areas	0HIER_NODE
IDES BA Germany	0HIER_NODE
Business area 1000	0HIER_NODE
Motorcycle Sales	0COSTCENTER
Pump Sales	0COSTCENTER
Paints and Solvents Sales	0COSTCENTER
Light Bulb Sales	0COSTCENTER
Motorcycle Production	0COSTCENTER
Motorcycle Assembly	0COSTCENTER
High-Performance Pump P	0COSTCENTER
Pump Assembly	0COSTCENTER
Chemical Product Product	0COSTCENTER
Scrap Paints	0COSTCENTER
Bulb Production Line 1000	0COSTCENTER
Bulb Production Line 2000	0COSTCENTER
Business area 2000	0HIER_NODE
Elevator Sales	0COSTCENTER
Turbines	0COSTCENTER
Elevator Assembly	0COSTCENTER
Turbine Preassembly	0COSTCENTER

Steps to Implement Security on the Hierarchy Level

➢1. Make the InfoObject on which the hierarchy is based authorization-relevant. For example, if the hierarchy is based on cost centers, then 0COSTCENTER should be marked authorization-relevant.

➢2. Create an analysis authorization to protect the hierarchy using the InfoObject.

➢3. Grant authorizations for hierarchy nodes to meet business needs to the users.

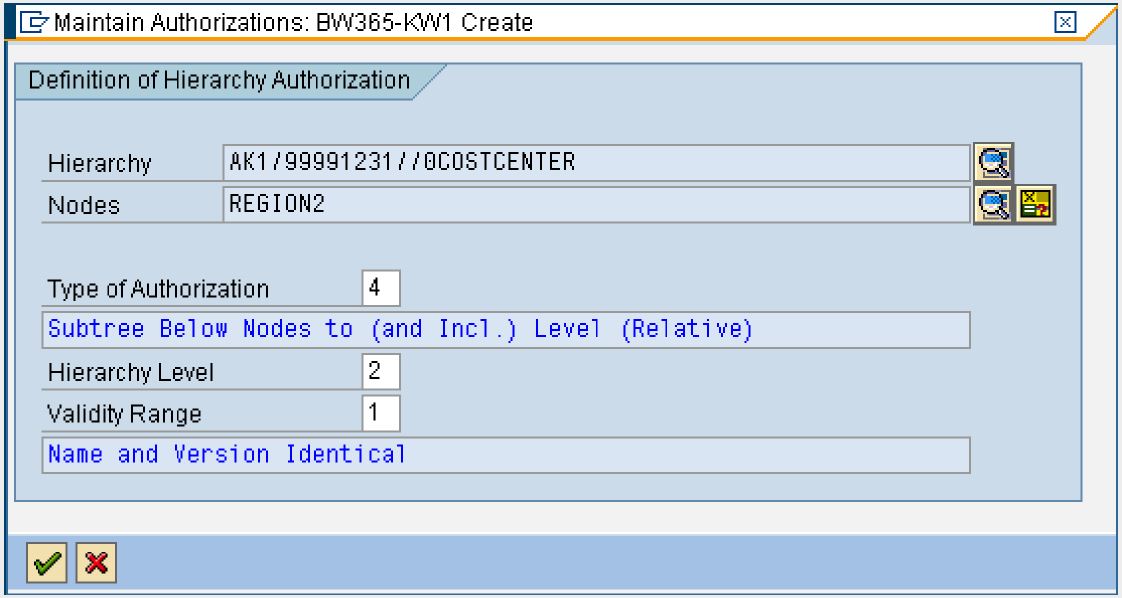
Maintaining Authorizations for Hierarchies

➢When creating an analysis authorization choose the InfoObject the hierarchy is based on as characteristic/dimension.

➢2.To create hierarchy node authorizations, in the detail maintenance choose the tab Hierarchy Authorization.

➢3.Create a hierarchy authorization and select the hierarchy and node.

➢4.Select the Type of authorization:



Maintain Authorizations: BW365-KW1 Create

Definition of Hierarchy Authorization

Hierarchy	AK1/99991231//0COSTCENTER
Nodes	REGION2
Type of Authorization	4
Subtree Below Nodes to (and Incl.) Level (Relative)	
Hierarchy Level	2
Validity Range	1
Name and Version Identical	

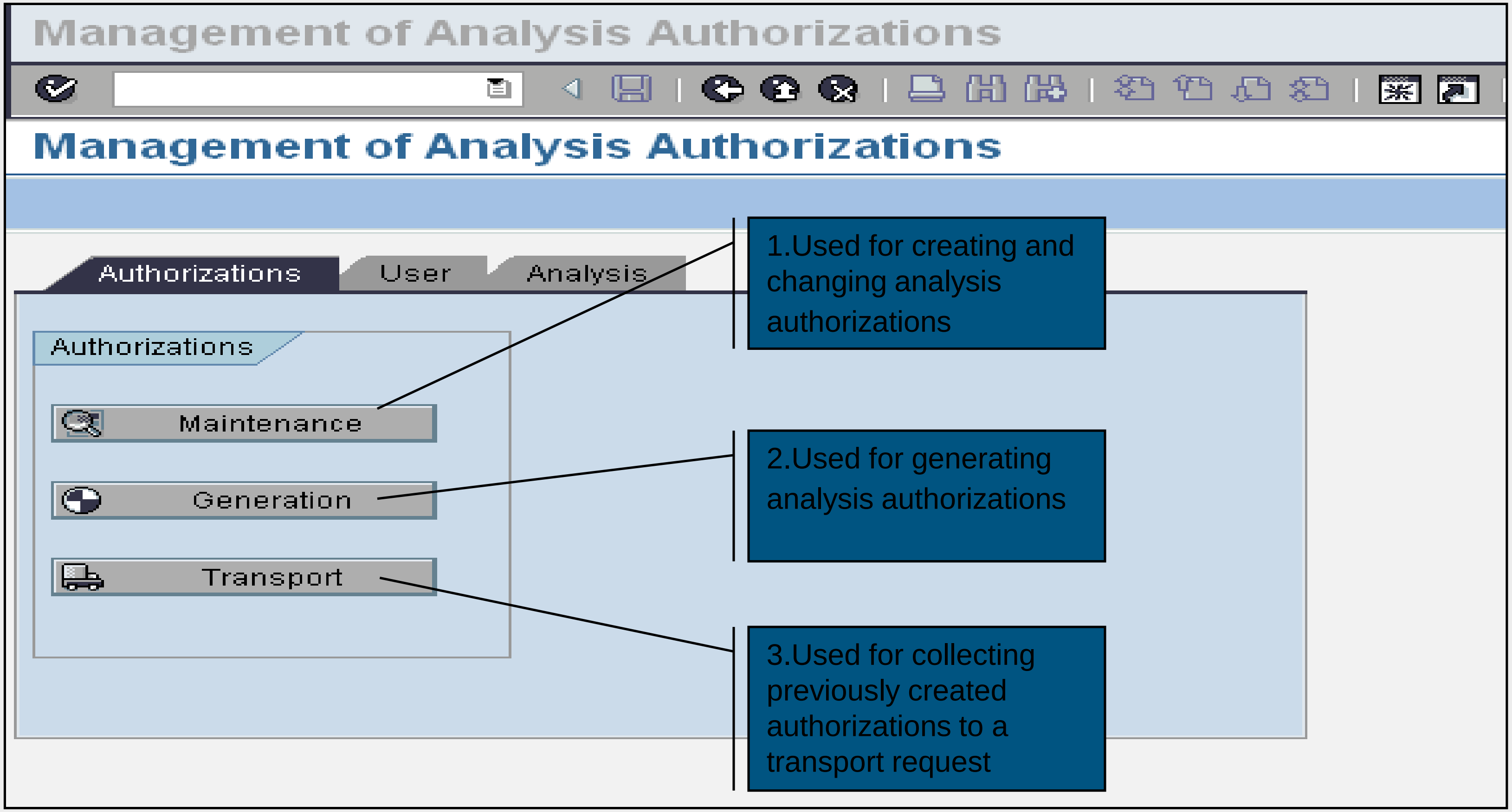
Monitoring Analysis Authorizations (Trace Functions)

➢Transaction : RSECADMIN (Management of Analysis Authorizations) provides a central entry point for all functions that are required to manage analysis authorizations.

➢There are three important tabs in the main screen of this transaction. They are:

- Authorizations
- User
- Analysis

RSECADMIN - Authorizations Tab

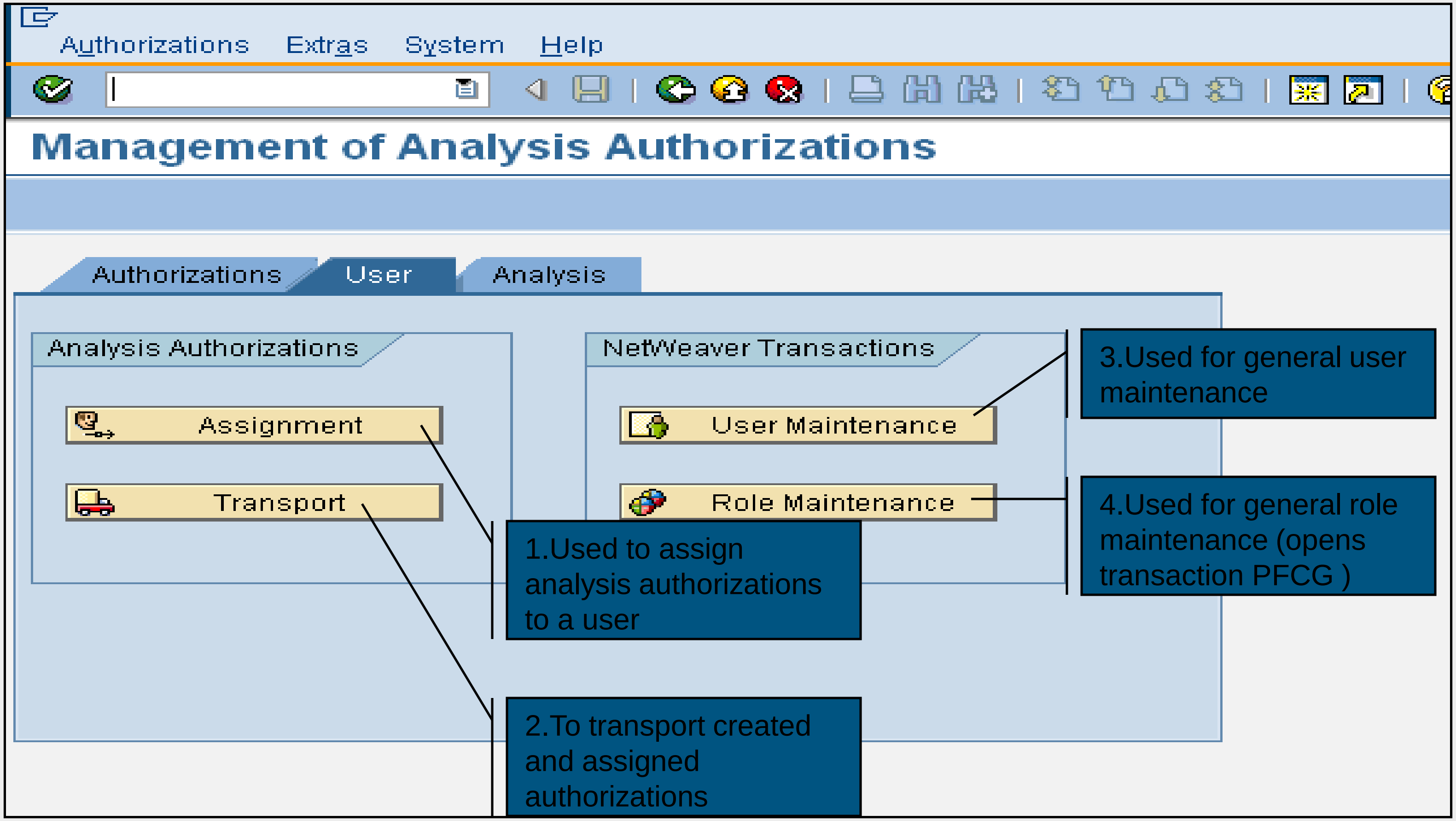

Management of Analysis Authorizations
Management of Analysis Authorizations
Authorizations
User
Analysis
Authorizations
Maintenance
Generation
Transport

1.Used for creating and changing analysis authorizations

2.Used for generating analysis authorizations

3.Used for collecting previously created authorizations to a transport request

RSECADMIN – User Tab



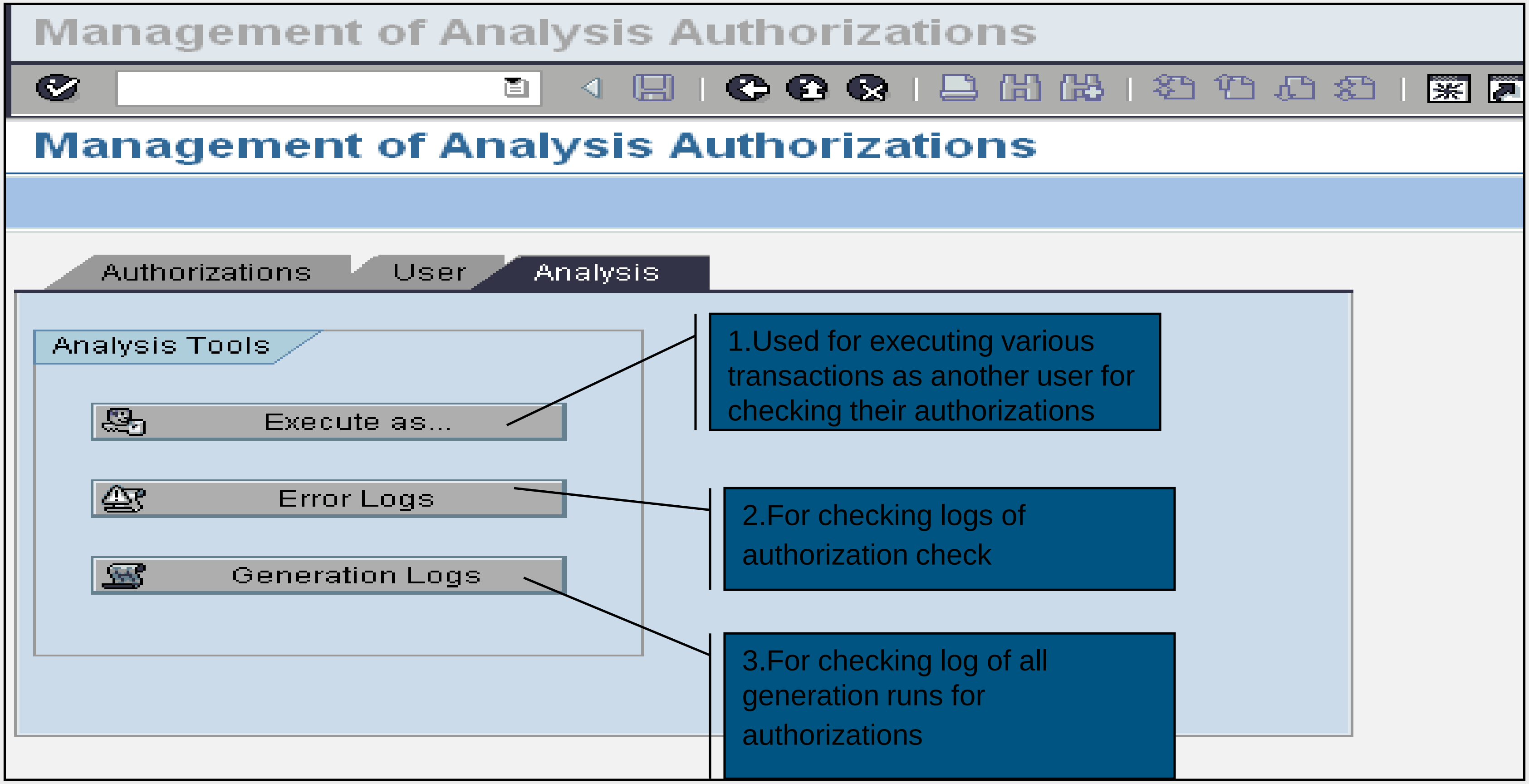
1.Used to assign analysis authorizations to a user

2.To transport created and assigned authorizations

3.Used for general user maintenance

4.Used for general role maintenance (opens transaction PFCG)

RSECADMIN - Analysis Tab



1.Used for executing various transactions as another user for checking their authorizations

2.For checking logs of authorization check

3.For checking log of all generation runs for authorizations

3. Saving BEx Objects to BI Roles

➢ Objectives

➢Securing Workbooks

- Describe the difference between workbooks and queries.
- Explain security that surrounds workbooks.
- Add workbooks to roles.

Business Example

➢Once a user navigates and formats the query results to suit their needs, they may want to save the results in a workbook.

➢The user can save the workbook in a *Role* folder so that it is easy to call it up again later on.

➢Saving a workbook to a Role also means that other users, who have the same role, can execute the workbook.

➢For example, if the sales manager for the northern regions wants to make a workbook accessible to a sales manager from the southern region, the workbook can be accessible by both managers if it is saved in a role that is common to both managers.

➢You must set up security to control who can save workbooks, where they can be saved, and which workbooks appear in the BEx Analyzer for a specific user.

Comparison of Workbooks and Queries

➢Queries are actually inserted into workbooks so you can display them. A workbook could contain several queries that are related in nature.

➢Thus, a query is more the technical definition of what the results should look like. Workbooks are actual results that have been formatted and can be refreshed each time the workbook is executed.

➢The query is a definition of what data the query should fetch and how the data should be initially displayed.

➢ A query definition includes rows, columns, filters, and free characteristics.

➢Multiple query results saved in workbooks from the same query definition enable users to customize how they want to review the results and analyze the data.

Saving Workbooks to Roles

- In order to save workbooks to roles, a user needs:

. S_USER_AGR: Authorizations: Role check

. S_USER_TCD: Transactions in roles

- The authorization object S_USER_AGR has two fields: Activity and Role Name.

- For the Activity field, the user must have at least values 01, 02 and 22. If the user can delete workbooks, they will also need value 06. For the Role Name, you should enter the specific roles you have created for saving workbooks.

- Authorization object S_USER_TCD has one field, Transaction Code.

- The user needs value RRMX in this field.

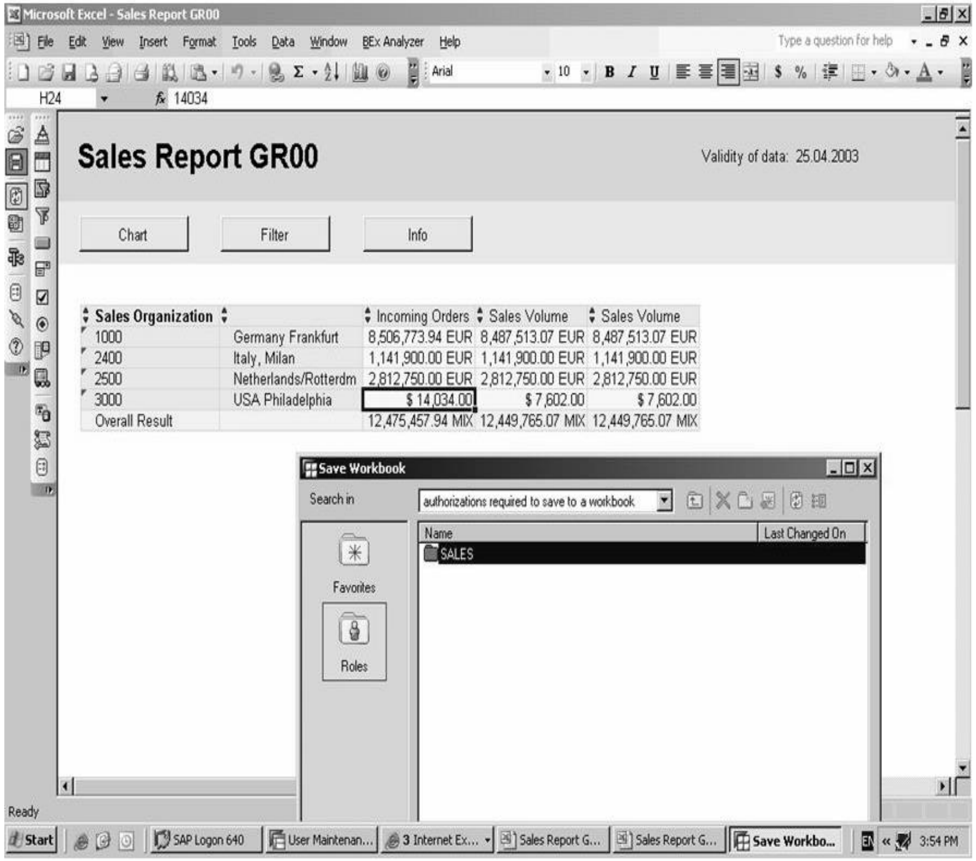
Authorizations to Save Workbooks to a Role

From the BEx toolbar choose:

Save Workbook as.

Choose *Role.*

Choose the folder.



Microsoft Excel - Sales Report GR00
File Edit View Insert Format Tools Data Window BEx Analyzer Help
Type a question for help
Arial
10
H24
14034

Sales Report GR00

Validity of data: 25.04.2003

Sales Organization		Incoming Orders	Sales Volume	Sales Volume
1000	Germany Frankfurt	8,506,773.94 EUR	8,487,513.07 EUR	8,487,513.07 EUR
2400	Italy, Milan	1,141,900.00 EUR	1,141,900.00 EUR	1,141,900.00 EUR
2500	Netherlands/Rotterdm	2,812,750.00 EUR	2,812,750.00 EUR	2,812,750.00 EUR
3000	USA Philadelphia	$ 14,034.00	$ 7,602.00	$ 7,602.00
Overall Result		12,475,457.94 MIX	12,449,765.07 MIX	12,449,765.07 MIX

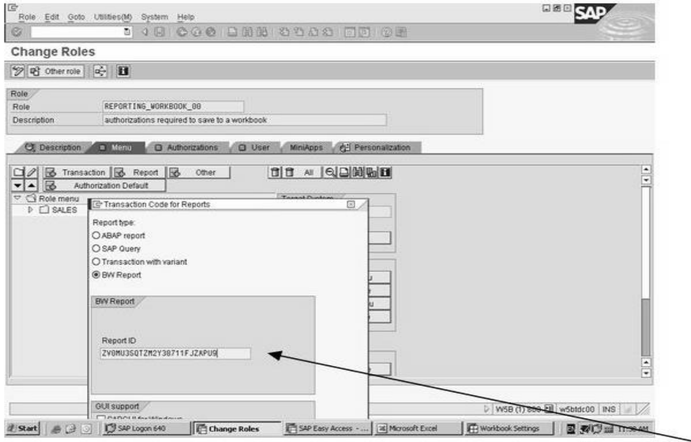
Save Workbook

Search in: authorizations required to save to a workbook

Name	Last Changed On
SALES	

Save a Workbook to a Role from the BEx Analyzer

- ➢Save a Workbook to a Role Menu from Role Maintenance



Change Roles

Role

Role: REPORTING_WORKBOOK_00

Description: authorizations required to save to a workbook

Transaction Code for Reports

Report type:

○ ABAP report

○ SAP Query

○ Transaction with variant

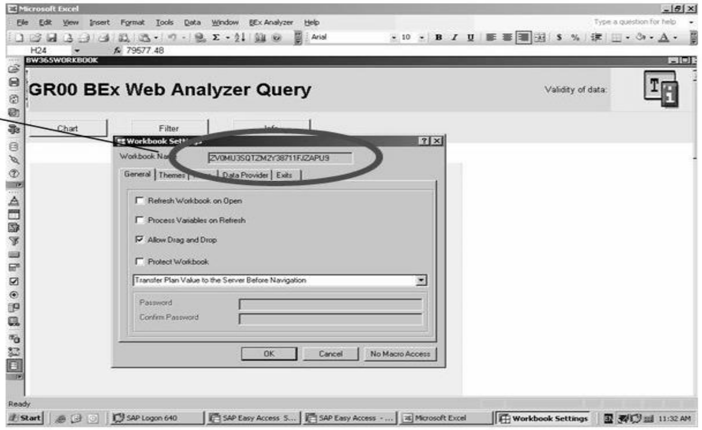
● BW Report

BW Report

Report ID: ZV0MU3SQTZM2Y38711FJZAPU9

Workbbooks can be added to a role from Role Maintenance, PFCG: from the Menu Tab, choose ***Add Report, BW Report***. Enter the ***Workbook Name***.

Find the workbook name in the BEx Analyser: from the BEx menu choose ***Workbook Settings***.



H24 79577.48

GR00 BEx Web Analyzer Query

Workbook Name: ZV0MU3SQTZMZY38711FJZAPU9

□ Refresh Workbook on Open

□ Process Variables on Refresh

☑ Allow Drag and Drop

□ Protect Workbook

Transfer Plan Value to the Server Before Navigation

Password

Confirm Password

4. Securing Data Access for Administration Users

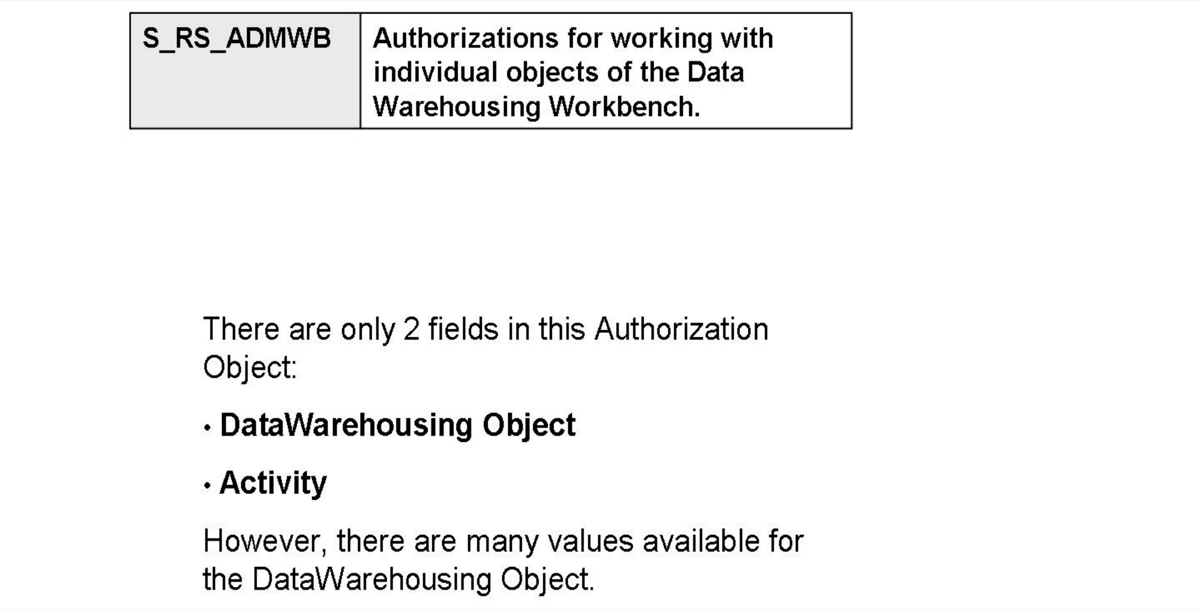
➢Objectives

- Securing Data Access for Administrators
- System Communication Security

Securing Data Warehousing Workbench Objects

➢Administrators must have access to Data Warehousing Workbench objects, such as InfoProviders, Data Transfer processes, Process Chains, Reporting Agent objects, Open Hub destinations, and DataSources.

➢Administrators must also create and maintain many other Data Warehousing objects. Authorization object S_RS_ADMWB protects these objects.



S_RS_ADMWB	**Authorizations for working with individual objects of the Data Warehousing Workbench.**

There are only 2 fields in this Authorization Object:

- **DataWarehousing Object**
- **Activity**

However, there are many values available for the DataWarehousing Object.

Data Warehousing objects secured with S_RS_ADMWB:

- *SourceSys* (Source system)
- *InfoObject* (InfoObject)
- *Monitor* (Monitor)
- *ApplComp (*Application components)
- InfoArea (InfoArea)
- *Workbench* (Data Warehousing Workbench)
- *Settings* (Settings)
- *MetaData (*Metadata)
- *InfoPackag* (InfoPackage and InfoPackage Group)
- *RA_Setting* (Reporting Agent setting)

Data Warehousing objects secured with S_RS_ADMWB:

- ➢RA_Package (Reporting Agent package)

- ➢DOC_META (Documents for metadata)

- ➢DOC_MAST (Documents for master data)

- ➢DOC_HIER (Documents for hierarchies)

- ➢DOC_TRAN (Documents for transaction data)

- ➢DOC_ADMIN (Administration of document store)

- ➢CONT_ADMIN (Administration of Content systems)

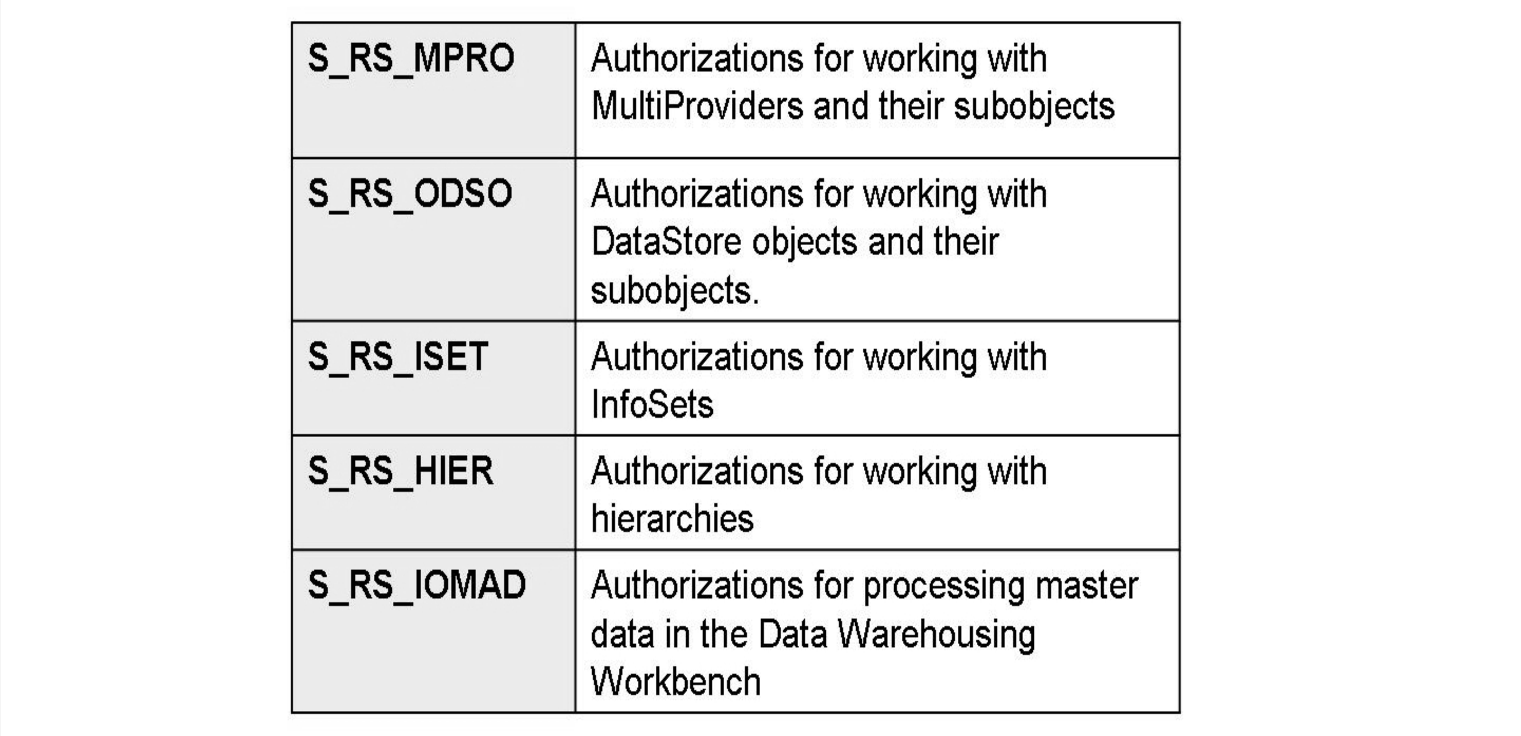
- ➢CONT_ACT (Installation of Business Content)

- ➢BR_SETTING (Broadcast settings other than your own settings, which have one of the following distribution types: Send e-mail, send to the portal, send to the printer.)

Data Warehousing objects secured with S_RS_ADMWB:

- ➢USE_DND (Drag and Drop to InfoAreas and application components)
- ➢CNG_RUN (Attribute change run)
- ➢REMOD_RULE (Modeling Rule "Modeling Rule" for the remodeling tool)
- ➢IMG_BI (BI-relevant activities in IMG)
- ➢OLAP_CACHE (OLAP cache objects)
- ➢HPA_ZA (BIA Monitor checks and activities)

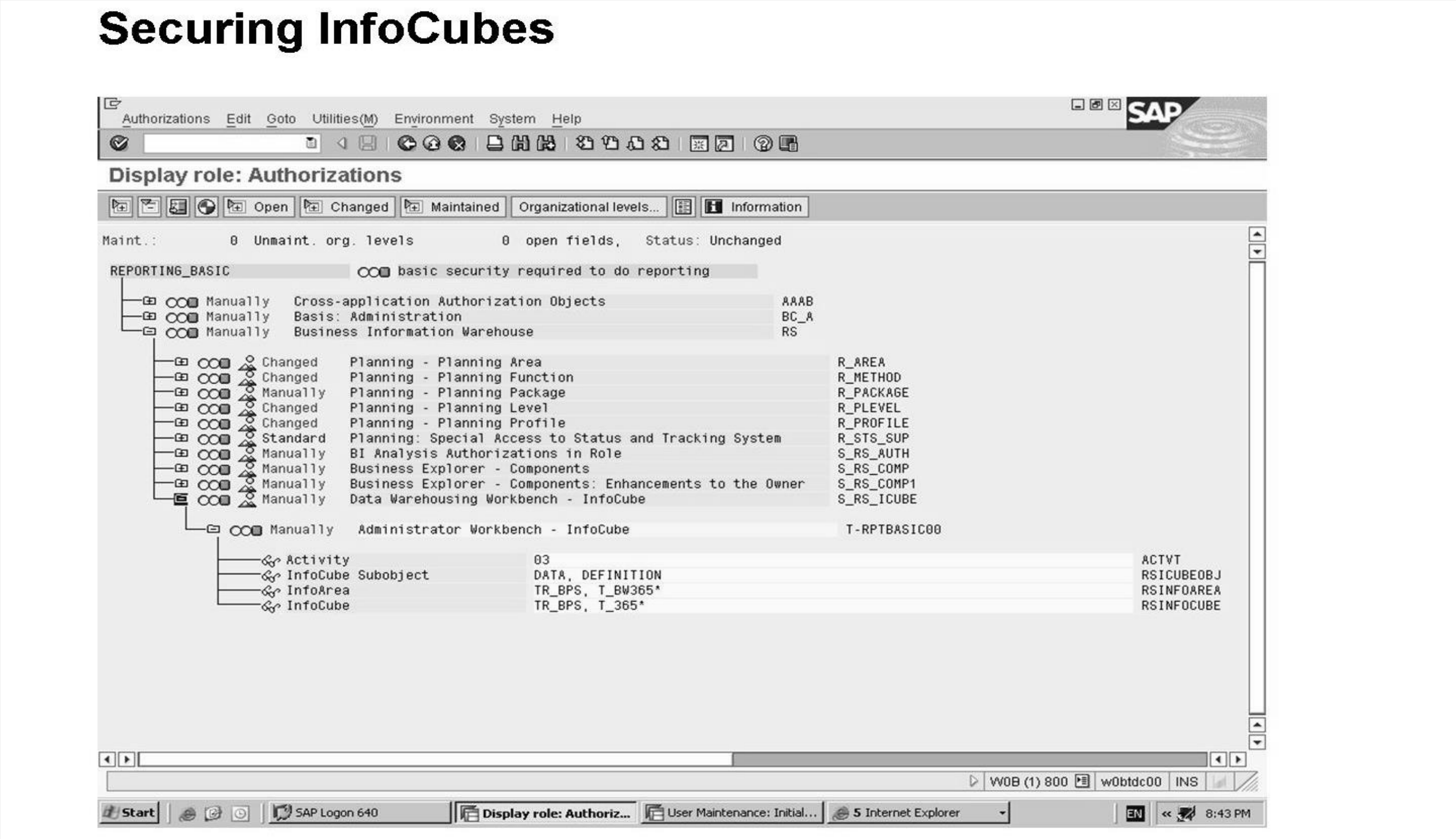
Securing InfoProviders



S_RS_MPRO	Authorizations for working with MultiProviders and their subobjects
S_RS_ODSO	Authorizations for working with DataStore objects and their subobjects.
S_RS_ISET	Authorizations for working with InfoSets
S_RS_HIER	Authorizations for working with hierarchies
S_RS_IOMAD	Authorizations for processing master data in the Data Warehousing Workbench

Securing InfoCubes

➢The authorization object S_RS_ICUBE protects InfoCubes and the InfoCube sub-objects:

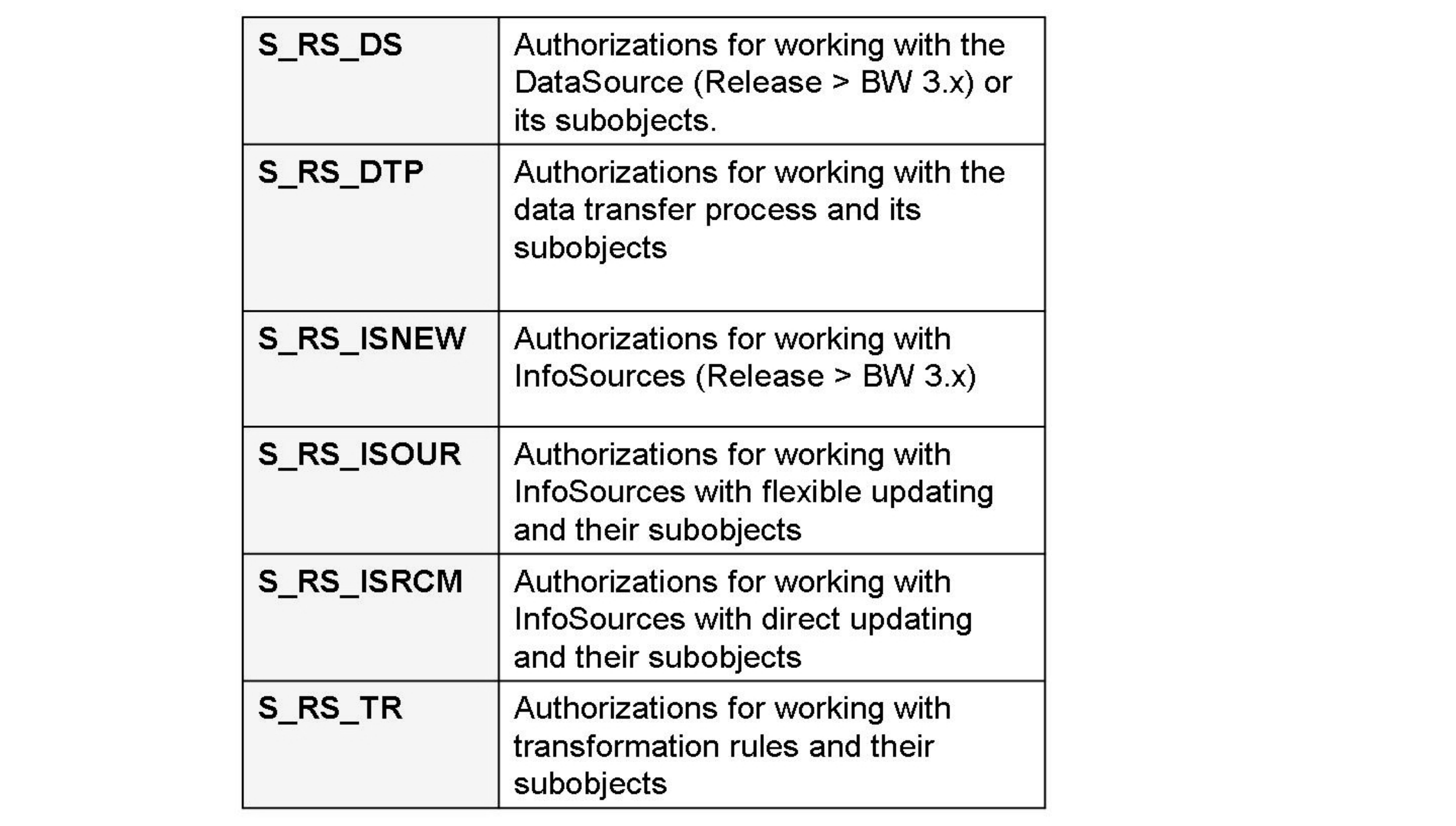


Securing InfoCubes

Display role: Authorizations

```
Maint.:          0  Unmaint. org. levels          0  open fields,   Status: Unchanged

REPORTING_BASIC              basic security required to do reporting
   Manually   Cross-application Authorization Objects                AAAB
   Manually   Basis: Administration                                  BC_A
   Manually   Business Information Warehouse                         RS
      Changed    Planning - Planning Area                                 R_AREA
      Changed    Planning - Planning Function                             R_METHOD
      Manually   Planning - Planning Package                              R_PACKAGE
      Changed    Planning - Planning Level                                R_PLEVEL
      Changed    Planning - Planning Profile                              R_PROFILE
      Standard   Planning: Special Access to Status and Tracking System   R_STS_SUP
      Manually   BI Analysis Authorizations in Role                       S_RS_AUTH
      Manually   Business Explorer - Components                           S_RS_COMP
      Manually   Business Explorer - Components: Enhancements to the Owner S_RS_COMP1
      Manually   Data Warehousing Workbench - InfoCube                    S_RS_ICUBE
         Manually   Administrator Workbench - InfoCube                       T-RPTBASIC00
            Activity              03                                     ACTVT
            InfoCube Subobject    DATA, DEFINITION                       RSICUBEOBJ
            InfoArea              TR_BPS, T_BW365*                       RSINFOAREA
            InfoCube              TR_BPS, T_365*                         RSINFOCUBE
```

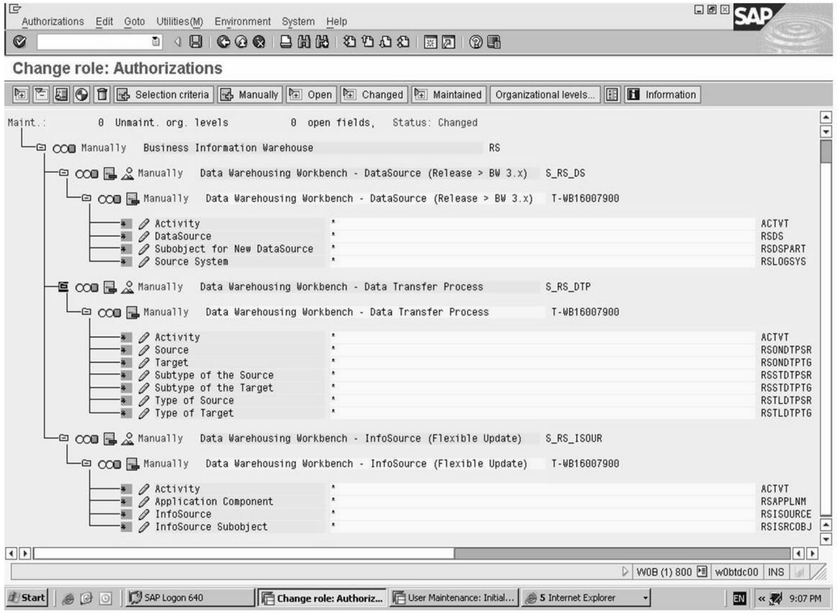
Securing Data Transfer Processes, InfoSources and DataSources



S_RS_DS	Authorizations for working with the DataSource (Release > BW 3.x) or its subobjects.
S_RS_DTP	Authorizations for working with the data transfer process and its subobjects
S_RS_ISNEW	Authorizations for working with InfoSources (Release > BW 3.x)
S_RS_ISOUR	Authorizations for working with InfoSources with flexible updating and their subobjects
S_RS_ISRCM	Authorizations for working with InfoSources with direct updating and their subobjects
S_RS_TR	Authorizations for working with transformation rules and their subobjects

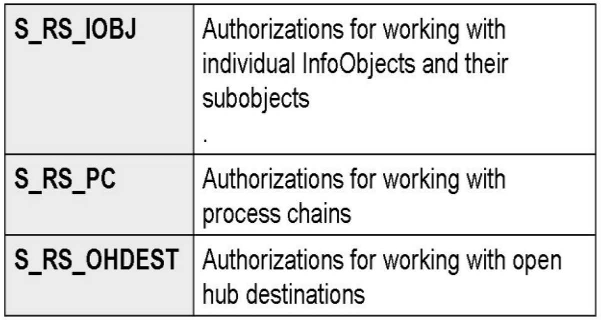
Securing InfoSources and DataSources, Additional DataWarehousing Objects

Securing InfoSources and DataSources



```
Maint.:        0  Unmaint. org. levels        0  open fields,   Status: Changed
  Manually   Business Information Warehouse                                  RS
    Manually   Data Warehousing Workbench - DataSource (Release > BW 3.x)    S_RS_DS
      Manually   Data Warehousing Workbench - DataSource (Release > BW 3.x)    T-WB16007900
        Activity                      *                                    ACTVT
        DataSource                    *                                    RSDS
        Subobject for New DataSource  *                                    RSDSPART
        Source System                 *                                    RSLOGSYS
    Manually   Data Warehousing Workbench - Data Transfer Process             S_RS_DTP
      Manually   Data Warehousing Workbench - Data Transfer Process             T-WB16007900
        Activity                      *                                    ACTVT
        Source                        *                                    RSONDTPSR
        Target                        *                                    RSONDTPTG
        Subtype of the Source         *                                    RSSTDTPSR
        Subtype of the Target         *                                    RSSTDTPTG
        Type of Source                *                                    RSTLDTPSR
        Type of Target                *                                    RSTLDTPTG
    Manually   Data Warehousing Workbench - InfoSource (Flexible Update)     S_RS_ISOUR
      Manually   Data Warehousing Workbench - InfoSource (Flexible Update)     T-WB16007900
        Activity                      *                                    ACTVT
        Application Component         *                                    RSAPPLNM
        InfoSource                    *                                    RSISOURCE
        InfoSource Subobject          *                                    RSISRCOBJ
```

Securing Additional DataWarehousing Objects



S_RS_IOBJ	Authorizations for working with individual InfoObjects and their subobjects .
S_RS_PC	Authorizations for working with process chains
S_RS_OHDEST	Authorizations for working with open hub destinations

System Communication Security

- BI Security Setup.

- In BI, you should create a system (not a dialog) user called BWREMOTE.

- BWREMOTE should have the authorization profile S_BI-WHM_RFC.

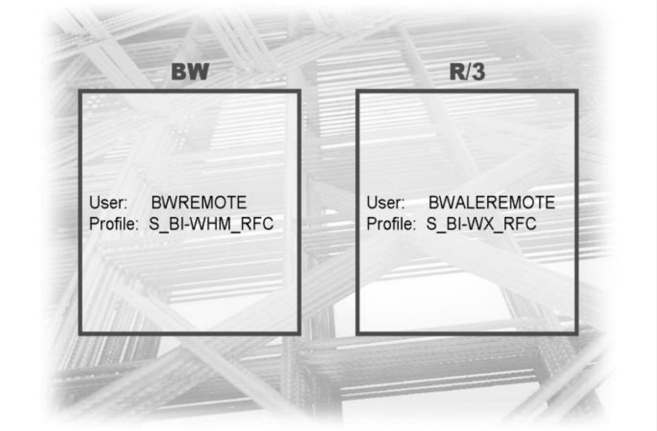
- Note: S_BI-WHM_RFC is a profile, not a role.

- This profile will give user BWREMOTE the access needed to extract from an OLTP system. The profile also provides the access required for staging steps to get the data into InfoCubes.

Other SAP Security Set Up

➢ You must set up a user on each SAP system sending data to BI.

➢ This includes mySAP ERP, Customer Relationship Management (CRM), Supplier Relationship Management (SRM), Advanced Planning Optimizer (APO), R/3 or any other component SAP system that is sending data to BI.

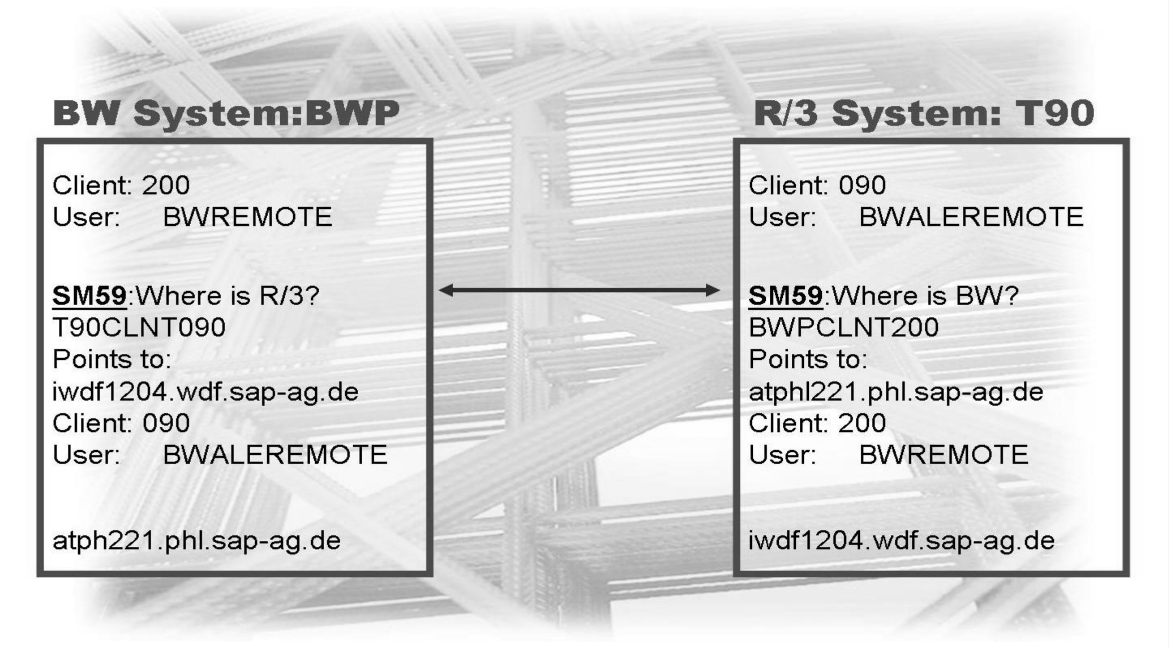


- On each of these systems, you should create a system user called.
- BWALEREMOTE. This user should have the authorization profile.
- S_BI-WX_RFC.
- Note: S_BI-WX_RFC is a profile, not a role.
- This profile will give user BWALEREMOTE the access needed to connect and send data to the BI system.

RFC Destinations

- RFC (Remote Function Call) destinations tell BI where the source systems are physically located. RFC destinations on the SAP source system tell the source.

- system where the BI system is physically located. RFC destinations define where the other systems reside and how to log on to the other systems.



BW System:BWP

Client: 200
User: BWREMOTE

SM59:Where is R/3?
T90CLNT090
Points to:
iwdf1204.wdf.sap-ag.de
Client: 090
User: BWALEREMOTE

atph221.phl.sap-ag.de

R/3 System: T90

Client: 090
User: BWALEREMOTE

SM59:Where is BW?
BWPCLNT200
Points to:
atphl221.phl.sap-ag.de
Client: 200
User: BWREMOTE

iwdf1204.wdf.sap-ag.de

5. Maintaining Authorizations

- Objectives

- Name and evaluate the various maintenance options for authorizations

Reasons for the Various Maintenance Options

- ➢Maintenance of authorizations should be as simple as possible.

- ➢The clarity of authorizations should be guaranteed.

- ➢The effort required with a high number of users should be as little as possible.

- ➢Criteria for Selecting an Authorization Maintenance Approach.

- How large is the number of users?
- Do many users have the same authorizations?
- If the users have different authorizations, do these differ only in the form of individual values?
- Are there many hierarchy authorizations to maintain?
- Is the authorization data available in any form (in another system or in a file)?
- Various security requirements for the maintenance scenarios themselves (example, .dual control principle.)

The Four Options for Authorization Maintenance

- ➢Role Maintenance
- ➢Analysis Authorization Maintenance
- ➢Customer exit variables for variable authorization assignment
- ➢Generate automatic authorizations

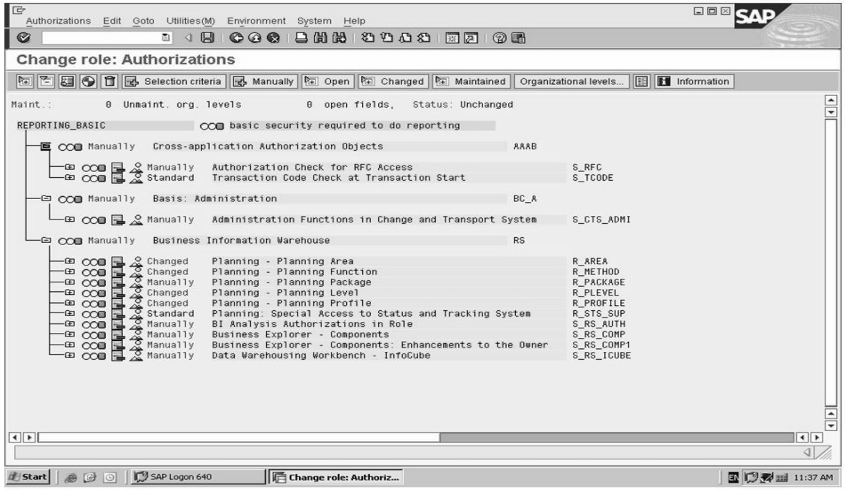
Role Maintenance

- Standard
- Correct customizing of roles is important
- Reusable basic roles separate from more individual roles
- Menu functions of roles separate from authorizations as needed
- Avoid overlaps

Basic Reporting Role Example

These authorizations:

- Can be assigned to every Reporting User
- Do not need to be assigned again in other roles



Change role: Authorizations

```
Maint.:          0  Unmaint. org. levels          0  open fields,   Status: Unchanged

REPORTING_BASIC              basic security required to do reporting
   Manually   Cross-application Authorization Objects                  AAAB
      Manually   Authorization Check for RFC Access                            S_RFC
      Standard   Transaction Code Check at Transaction Start                   S_TCODE
   Manually   Basis: Administration                                    BC_A
      Manually   Administration Functions in Change and Transport System       S_CTS_ADMI
   Manually   Business Information Warehouse                           RS
      Changed    Planning - Planning Area                                      R_AREA
      Changed    Planning - Planning Function                                  R_METHOD
      Manually   Planning - Planning Package                                   R_PACKAGE
      Changed    Planning - Planning Level                                     R_PLEVEL
      Changed    Planning - Planning Profile                                   R_PROFILE
      Standard   Planning: Special Access to Status and Tracking System        R_STS_SUP
      Manually   BI Analysis Authorizations in Role                            S_RS_AUTH
      Manually   Business Explorer - Components                                S_RS_COMP
      Manually   Business Explorer - Components: Enhancements to the Owner     S_RS_COMP1
      Manually   Data Warehousing Workbench - InfoCube                         S_RS_ICUBE
```

Analysis Authorization Maintenance

- All activities for managing the components of analysis authorizations are maintained in the Management of Analysis Authorizations transaction, RSECADMIN. (The authorization object S_RSEC protects the analysis authorization maintenance. This authorization object is intended for the assignment of authorizations to the infrastructure of analysis authorizations in the BI-System.)

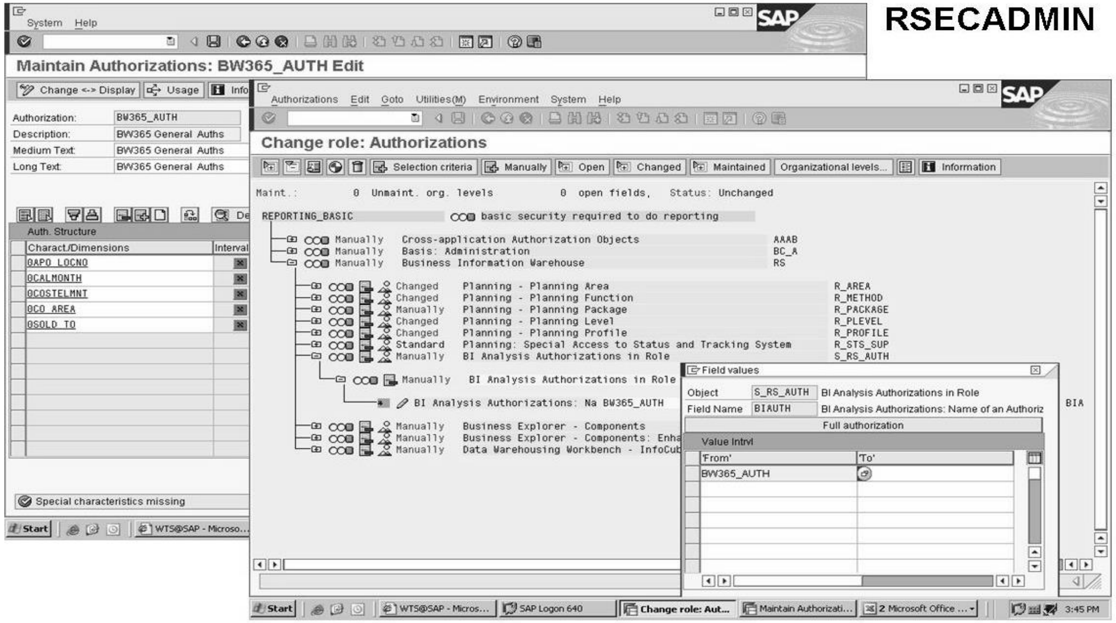
- In the Management of Analysis Authorizations, analysis authorizations are easily created and maintained. User assignments to analysis authorizations are made quickly from the assign tab. Hierarchy analysis authorizations are created and maintained easily within RSECADMIN.

- With a special authorization object for role connection, S_RS_AUTH, the new analysis authorizations can be assigned using role maintenance.

Analysis Authorization Maintenance

Assignment of Analysis Authorizations to Roles

Alternatively Analysis Authorizations can be assigned to Roles using the authorization object S_RS_AUTH.



RSECADMIN

Maintain Authorizations: BW365_AUTH Edit

Authorization:	BW365_AUTH
Description:	BW365 General Auths
Medium Text:	BW365 General Auths
Long Text:	BW365 General Auths

Auth. Structure

Charact./Dimensions	Interval
0APO_LOCNO	☒
0CALMONTH	☒
0COSTELMNT	☒
0CO_AREA	☒
0SOLD_TO	☒

Special characteristics missing

Change role: Authorizations

```
Maint.:          0  Unmaint. org. levels          0  open fields,   Status: Unchanged

REPORTING_BASIC              basic security required to do reporting
   Manually   Cross-application Authorization Objects                AAAB
   Manually   Basis: Administration                                  BC_A
   Manually   Business Information Warehouse                         RS
      Changed    Planning - Planning Area                                R_AREA
      Changed    Planning - Planning Function                            R_METHOD
      Manually   Planning - Planning Package                             R_PACKAGE
      Changed    Planning - Planning Level                               R_PLEVEL
      Changed    Planning - Planning Profile                             R_PROFILE
      Standard   Planning: Special Access to Status and Tracking System  R_STS_SUP
      Manually   BI Analysis Authorizations in Role                      S_RS_AUTH
         Manually   BI Analysis Authorizations in Role
            BI Analysis Authorizations: Na BW365_AUTH                        BIA
      Manually   Business Explorer - Components
      Manually   Business Explorer - Components: Enha
      Manually   Data Warehousing Workbench - InfoCub
```

Field values

Object	S_RS_AUTH	BI Analysis Authorizations in Role
Field Name	BIAUTH	BI Analysis Authorizations: Name of an Authoriz

Full authorization

Value Intrvl

'From'	'To'
BW365_AUTH	

PFCG

Customer Exit Variables for Authorization Maintenance

➢Function of a Variable

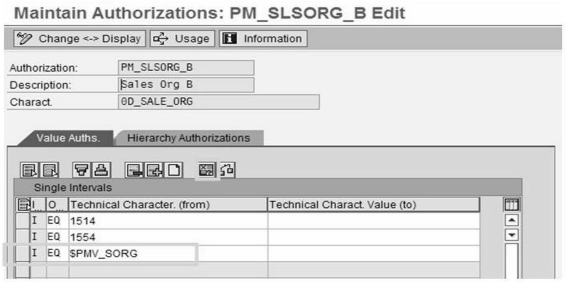
- Normal filtering of queries

- Hierarchy: determine authorized values

➢The authorization assignment via customer exit variables has NOTHING to do with the concept of variables of processing type .authorization..

Customer Exit Variables for:

- **Hierarchy authorizations**
- **Value authorizations**
  Example: determine sales organization from assignments of the user master data.



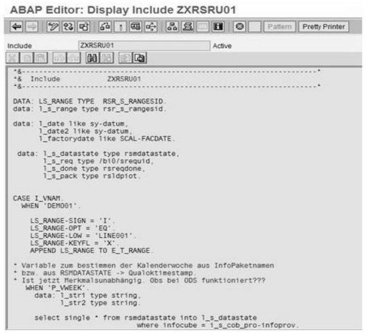
Maintain Authorizations: PM_SLSORG_B Edit

Authorization: PM_SLSORG_B
Description: Sales Org B
Charact. 0D_SALE_ORG

I	O	Technical Character. (from)	Technical Charact. Value (to)
I	EQ	1514	
I	EQ	1554	
I	EQ	$PMV_SORG	

$ indicates the variable in the authorization.

Use enhancement RSR00001 (transaction CMOD) for the necessary ABAP coding.



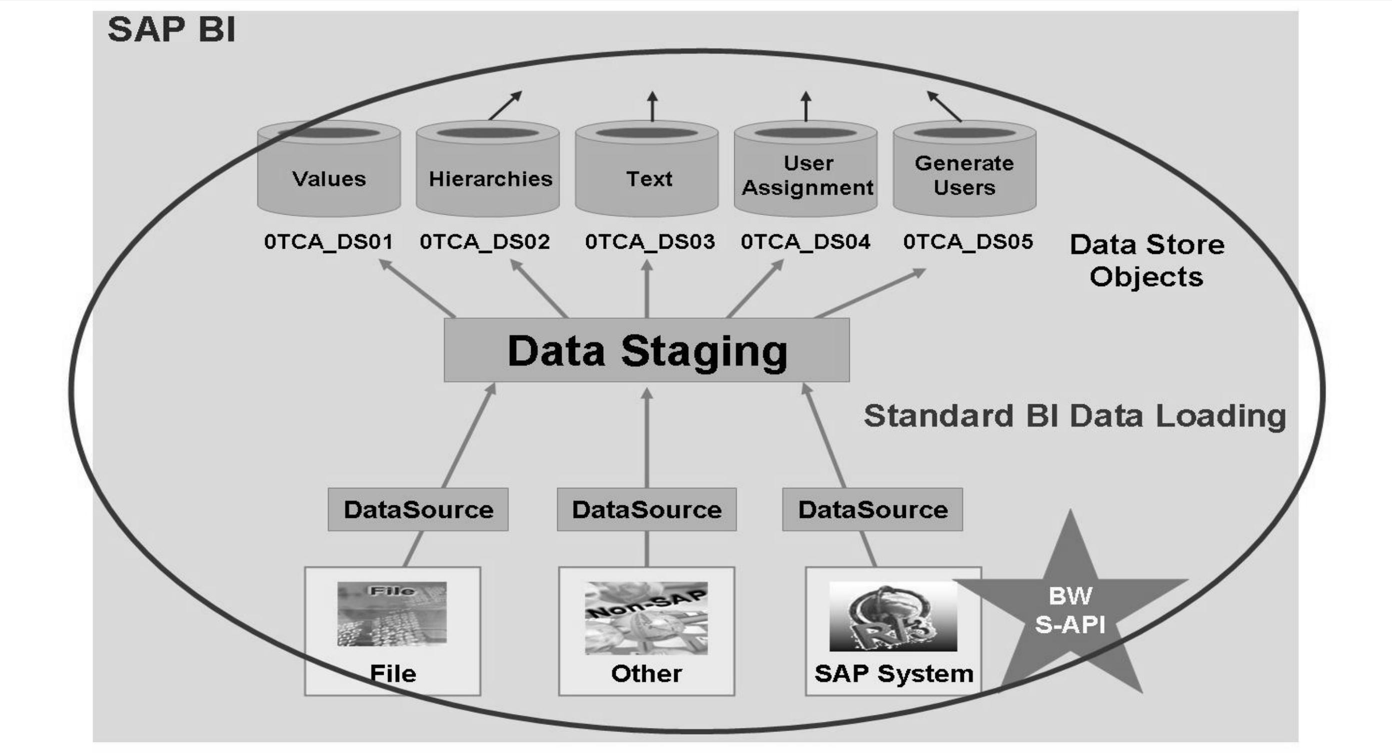
ABAP Editor: Display Include ZXRSRU01

Include ZXRSRU01 Active

```
*&---------------------------------------------------------------------*
*&  Include           ZXRSRU01
*&---------------------------------------------------------------------*

DATA: LS_RANGE TYPE  RSR_S_RANGESID.
data: l_s_range type rsr_s_rangesid.

data: l_date like sy-datum,
      l_date2 like sy-datum,
      l_factorydate like SCAL-FACDATE.

 data: l_s_datastate type rsmdatastate,
       l_s_req type /bi0/srequid,
       l_s_done type rsreqdone,
       l_s_pack type rsldpiot.


CASE I_VNAM.
  WHEN 'DEMO001'.

    LS_RANGE-SIGN = 'I'.
    LS_RANGE-OPT = 'EQ'.
    LS_RANGE-LOW = 'LINE001'.
    LS_RANGE-KEYFL = 'X'.
    APPEND LS_RANGE TO E_T_RANGE.

* Variable zum bestimmen der Kalenderwoche aus InfoPaketnamen
* bzw. aus RSMDATASTATE -> Qualoktimestamp.
* Ist jetzt Merkmalsunabhängig. Obs bei ODS funktioniert???
   WHEN 'P_VWEEK'.
     data: l_str1 type string,
           l_str2 type string.

     select single * from rsmdatastate into l_s_datastate
                             where infocube = l_s_cob_pro-infoprov.
```

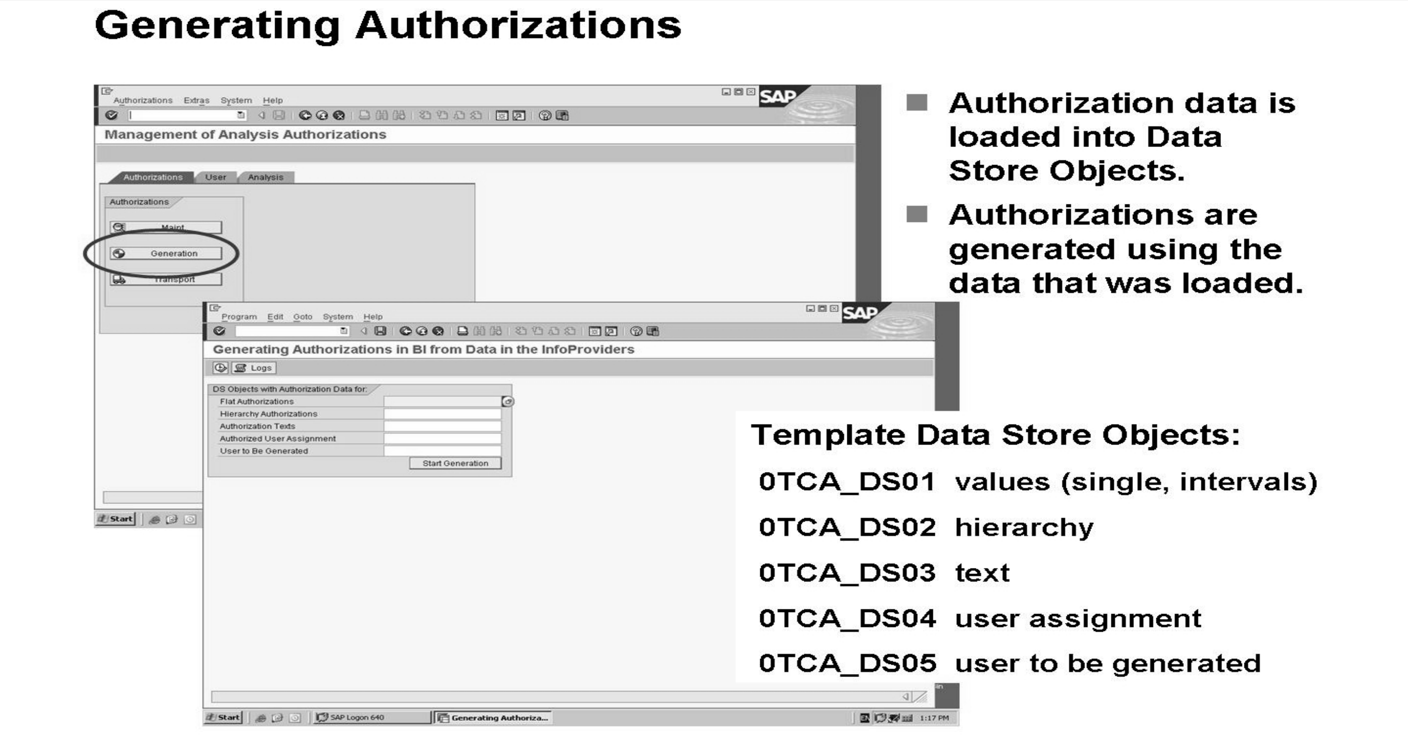
Automatic Generation of Authorizations

➢This option for authorization maintenance deals with fully automatic generation. Authorization data is loaded into Data Store Objects and then authorizations are generated with the information from the Data Store Objects.



Generating Authorizations

➢For the generation itself, you assign the associated authorization object(s) to the Data Store Objects and then execute them. To automate the generation use transaction RSECADMIN or report RSEC_GENERATE_AUTHORIZATIONS.



Generating Authorizations

- Authorization data is loaded into Data Store Objects.
- Authorizations are generated using the data that was loaded.

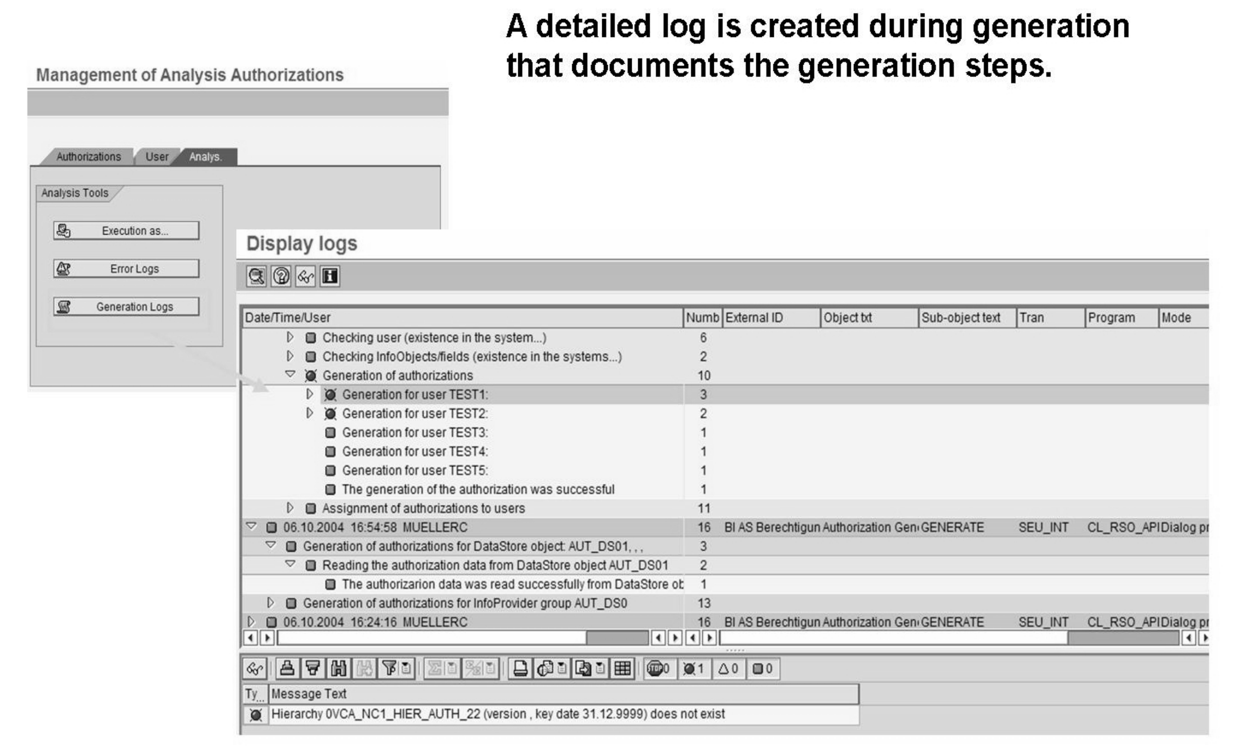
Template Data Store Objects:

0TCA_DS01	values (single, intervals)
0TCA_DS02	hierarchy
0TCA_DS03	text
0TCA_DS04	user assignment
0TCA_DS05	user to be generated

Authorizations Extras System Help
SAP
Management of Analysis Authorizations
Authorizations
User
Analysis
Authorizations
Maint.
Generation
Transport
Start
Program Edit Goto System Help
SAP
Generating Authorizations in BI from Data in the InfoProviders
Logs
DS Objects with Authorization Data for:
Flat Authorizations
Hierarchy Authorizations
Authorization Texts
Authorized User Assignment
User to Be Generated
Start Generation
Start
SAP Logon 640
Generating Authoriza...
1:17 PM

Generating Authorizations

➢For the generation itself, you assign the associated authorization object(s) to the Data Store Objects and then execute them. To automate the generation use transaction RSECADMIN or report RSEC_GENERATE_AUTHORIZATIONS.



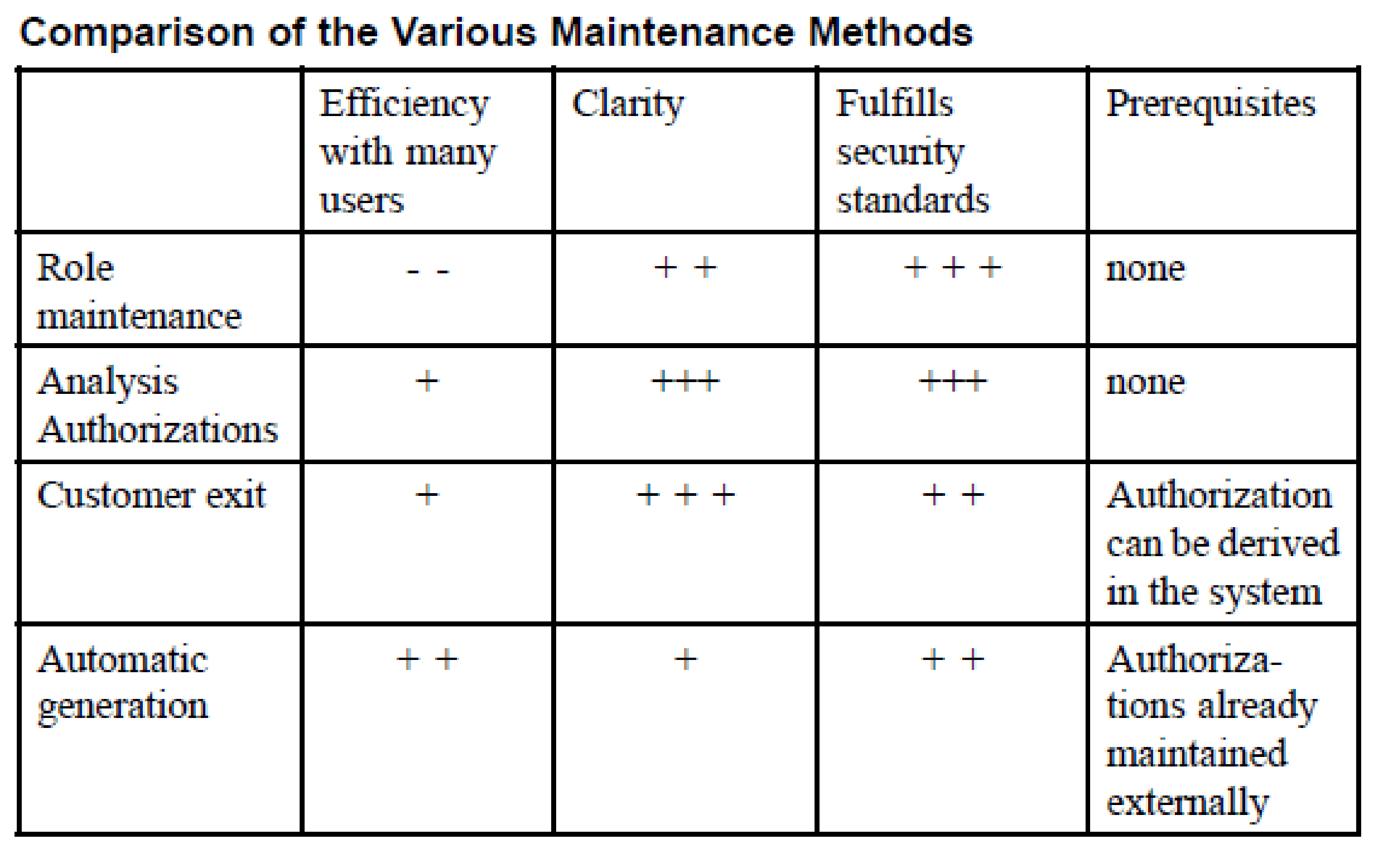
A detailed log is created during generation that documents the generation steps.

Display logs

Date/Time/User	Numb	External ID	Object txt	Sub-object text	Tran	Program	Mode
Checking user (existence in the system...)	6						
Checking InfoObjects/fields (existence in the systems...)	2						
Generation of authorizations	10						
Generation for user TEST1:	3						
Generation for user TEST2:	2						
Generation for user TEST3:	1						
Generation for user TEST4:	1						
Generation for user TEST5:	1						
The generation of the authorization was successful	1						
Assignment of authorizations to users	11						
06.10.2004 16:54:58 MUELLERC	16	BI AS Berechtigun	Authorization Gen	GENERATE	SEU_INT	CL_RSO_API	Dialog pr
Generation of authorizations for DataStore object: AUT_DS01, , ,	3						
Reading the authorization data from DataStore object AUT_DS01	2						
The authorizarion data was read successfully from DataStore ob	1						
Generation of authorizations for InfoProvider group AUT_DS0	13						
06.10.2004 16:24:16 MUELLERC	16	BI AS Berechtigun	Authorization Gen	GENERATE	SEU_INT	CL_RSO_API	Dialog pr

Ty...	Message Text
●	Hierarchy 0VCA_NC1_HIER_AUTH_22 (version , key date 31.12.9999) does not exist

Comparison of the Various Maintenance Methods



Comparison of the Various Maintenance Methods

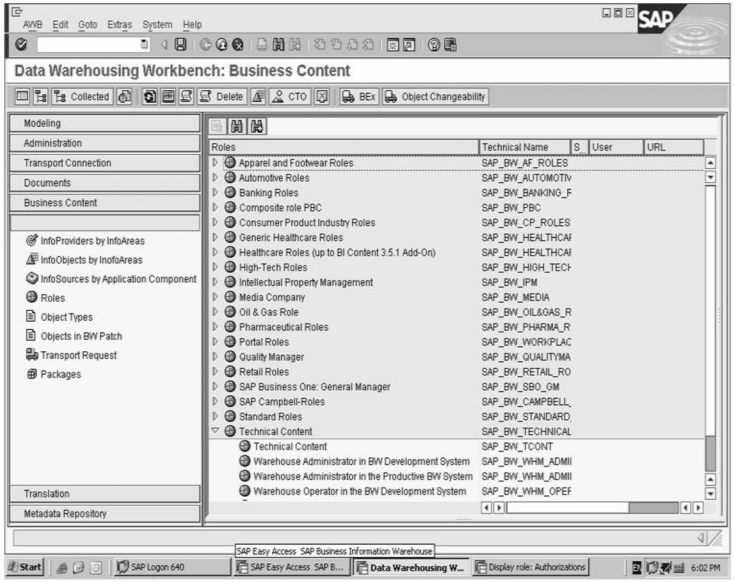
	Efficiency with many users	Clarity	Fulfills security standards	Prerequisites
Role maintenance	- -	+ +	+ + +	none
Analysis Authorizations	+	+++	+++	none
Customer exit	+	+ + +	+ +	Authorization can be derived in the system
Automatic generation	+ +	+	+ +	Authorizations already maintained externally

Business Content

➢SAP delivered Business Content provides many roles that can be activated and utilized to support a company's authorization strategy. Business Content contains many standard roles as well as roles that were developed for particular industries. Business Content roles can be implemented without being modified or they may serve as templates for building custom-defined roles.

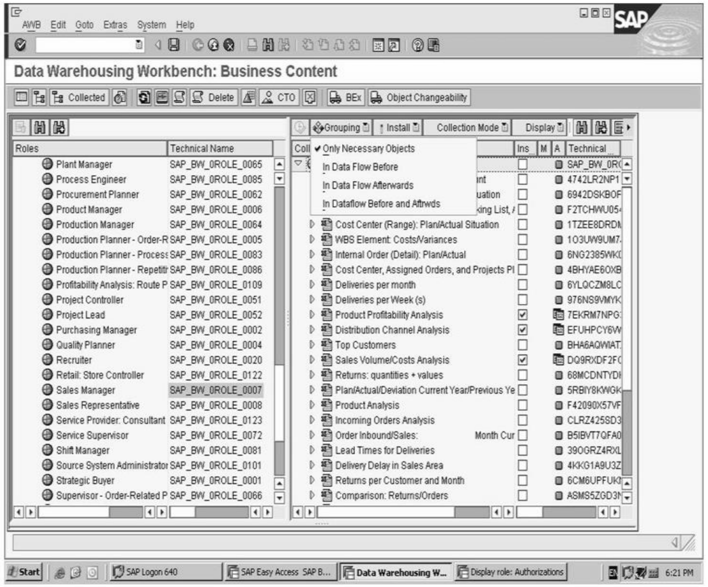
Business Content

Roles Delivered with Business Content



Roles	Technical Name	S	User	URL
Apparel and Footwear Roles	SAP_BW_AF_ROLES			
Automotive Roles	SAP_BW_AUTOMOTIV			
Banking Roles	SAP_BW_BANKING_F			
Composite role PBC	SAP_BW_PBC			
Consumer Product Industry Roles	SAP_BW_CP_ROLES			
Generic Healthcare Roles	SAP_BW_HEALTHCAI			
Healthcare Roles (up to BI Content 3.5.1 Add-On)	SAP_BW_HEALTHCAI			
High-Tech Roles	SAP_BW_HIGH_TECH			
Intellectual Property Management	SAP_BW_IPM			
Media Company	SAP_BW_MEDIA			
Oil & Gas Role	SAP_BW_OIL&GAS_R			
Pharmaceutical Roles	SAP_BW_PHARMA_R			
Portal Roles	SAP_BW_WORKPLAC			
Quality Manager	SAP_BW_QUALITYMA			
Retail Roles	SAP_BW_RETAIL_RO			
SAP Business One: General Manager	SAP_BW_SBO_GM			
SAP Campbell-Roles	SAP_BW_CAMPBELL_			
Standard Roles	SAP_BW_STANDARD			
Technical Content	SAP_BW_TECHNICAL			
Technical Content	SAP_BW_TCONT			
Warehouse Administrator in BW Development System	SAP_BW_WHM_ADMII			
Warehouse Administrator in the Productive BW System	SAP_BW_WHM_ADMII			
Warehouse Operator in the BW Development System	SAP_BW_WHM_OPEF			

Activating Business Content Roles



Roles	Technical Name
Plant Manager	SAP_BW_0ROLE_0065
Process Engineer	SAP_BW_0ROLE_0085
Procurement Planner	SAP_BW_0ROLE_0062
Product Manager	SAP_BW_0ROLE_0006
Production Manager	SAP_BW_0ROLE_0064
Production Planner - Order-R	SAP_BW_0ROLE_0005
Production Planner - Process	SAP_BW_0ROLE_0083
Production Planner - Repetiti	SAP_BW_0ROLE_0086
Profitability Analysis: Route P	SAP_BW_0ROLE_0109
Project Controller	SAP_BW_0ROLE_0051
Project Lead	SAP_BW_0ROLE_0052
Purchasing Manager	SAP_BW_0ROLE_0002
Quality Planner	SAP_BW_0ROLE_0004
Recruiter	SAP_BW_0ROLE_0020
Retail: Store Controller	SAP_BW_0ROLE_0122
Sales Manager	SAP_BW_0ROLE_0007
Sales Representative	SAP_BW_0ROLE_0008
Service Provider: Consultant	SAP_BW_0ROLE_0123
Service Supervisor	SAP_BW_0ROLE_0072
Shift Manager	SAP_BW_0ROLE_0081
Source System Administrator	SAP_BW_0ROLE_0101
Strategic Buyer	SAP_BW_0ROLE_0001
Supervisor - Order-Related P	SAP_BW_0ROLE_0066

Coll	Ins	M	A	Technical
	☐			SAP_BW_0R(
nt	☐			4742LR2NP1
uation	☐			6942DSKBOF
king List, /	☐			F2TCHWU05·
Cost Center (Range): Plan/Actual Situation	☐			1TZEE8DRDI
WBS Element: Costs/Variances	☐			1O3UW9UM7.
Internal Order (Detail): Plan/Actual	☐			6NG2385WK(
Cost Center, Assigned Orders, and Projects Pl	☐			4BHYAE6OXB
Deliveries per month	☐			6YLQCZM8LC
Deliveries per Week (s)	☐			976NS9VMYK
Product Profitability Analysis	☑			7EKRM7NPG
Distribution Channel Analysis	☑			EFUHPCY6W
Top Customers	☐			BHA6AQWIAT
Sales Volume/Costs Analysis	☑			DQ9RXDF2F(
Returns: quantities + values	☐			68MCDNTYDI
Plan/Actual/Deviation Current Year/Previous Ye	☐			5RBIY8KWGK
Product Analysis	☐			F42090X57VF
Incoming Orders Analysis	☐			CLRZ425SD3
Order Inbound/Sales: Month Cur	☐			B5IBVT7QFA0
Lead Times for Deliveries	☐			39OGRZ4RXL
Delivery Delay in Sales Area	☐			4KKG1A9U3Z
Returns per Customer and Month	☐			6CM6UPFUKI
Comparison: Returns/Orders	☐			ASMS5ZGD3I

Migration to new Authorizations

- ➢Migration is performed with the help of program RSEC_MIGRATION.
- ➢No complete, automatic migration, but support.
  - About 80% automatic migration expected
  - Customer exit variables for 0TCTAUTHH cannot be migrated
  - Intensive tests are highly recommended
- ➢ Singular event.
- ➢ During migration to new authorization concept, the existing concept won’t be changed.

Migration Steps

- ➢Step 1: Choose users
- ➢Step 2: Choose authorization objects to be migrated
- ➢Step 3: Choose assignment method
  - Direct user assignment
  - Create new profiles
  - Extend existing profiles
  - Undo migration
- ➢Step 4: Choose details of authorization migration and check logs

Useful Transaction codes

Transaction code	Use
RSECADMIN	For creating and assigning analysis authorizations and checking errors in analysis authorization.
PFCG	For creating roles and assigning users to roles.
SU03 / SU21	For information on authorization objects.
ST01	For checking errors in standard authorizations.

Tips and Tricks

- In case there are no authorization restrictions for any user (for example in a development system) include special authorization 0BI_ALL in authorization object S_RS_AUTH.

- SUIM – User Information System is a useful transaction code for checking user and role Assignments.

- Transaction codes RSECADMIN, ST01 and SU53 can be used to analyze user authorization errors.

BW 3.X Authorizations

➢Reporting Authorizations

- Previous to SAP Net Weaver 2004s, the SAP standard authorization concept was also used for analysis authorizations, then called reporting authorizations.

- SAP recommends using the new concept (Analysis Authorization in 2004s) because it is better suited to the requirements of BI and because the previous concept will no longer be supported.

➢To migrate authorizations from BW 3.X to BI 7.0,use program RSEC_MIGRATION

Additional Info

SAP Help Site for complete information on BI 7.0 authorizations.

http://help.sap.com/saphelp_nw04s/helpdata/en/be/076f3b6c980c3be10000000a11402f/frameset.htm