

Indirect Role Assignment Using HR-ORG



HELP.BCCCMUSR

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Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Typographic Conventions

Type Style	Description
<i>Example text</i>	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options. Cross-references to other documentation.
Example text	Emphasized words or phrases in body text, titles of graphics and tables.
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.
Example text	Screen output. This includes file and directory names and their paths, messages, source code, names of variables and parameters as well as names of installation, upgrade and database tools.
EXAMPLE TEXT	Keys on the keyboard, for example, function keys (such as F2) or the ENTER key.
Example text	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.

Users and Roles (BC-SEC-USR)	5
Changes to User and Role Maintenance	5
Indirect Role Assignment Using HR-ORG	5
Assigning a Role Indirectly	8
Indirect Role Assignment in a System Landscape	9
Distributing the HR-ORG Model	10
Creating an HR-ORG Distribution Model in the Sending System	12
Generating Partner Profiles of the HR-ORG Distribution Model	13
Creating an Outbound Filter with Customer Exit	14
Activating Change Pointers	15
Writing Change Pointers for Infotype 0105	15
Distribute HR-ORG-Model (Initial Distribution)	16
Distribute Changes to the HR_ORG Model	17

Indirect Role Assignment Using HR-ORG

Use

The employees or users require appropriate authorizations to perform their tasks. As the authorization administrator, you can assign the roles required for this (single and/or composite roles) directly using transactions SU01, SU10, and PFCG or indirectly using the HR-ORG model.

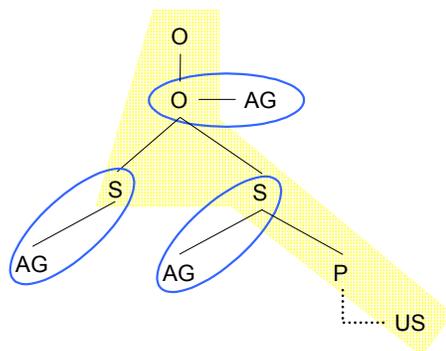
If the employee changes, you do not need to assign the role to the new employee again, but only the position. In this way, the new employee automatically receives the roles assigned indirectly through the position.

If an employee changes position, the personnel administrator assigns a new position to the employee. This means that the employee loses the authorizations that belonged to his or her old position, and receives the authorizations for his or her new position.

Process Flow

There must be a maintained HR-ORG model in your company for you to be able to assign roles indirectly as the authorization administrator. The employees or users are each assigned to a position that combines their activities. You can assign authorizations in the form of roles to any HR-ORG object types.

Task Areas of the HR Department and of the User Administrator



Legend

HR structure of the HR department
 Assignment by the user administrator
 Attribute assignment



The user master comparison (transaction PFUD) evaluates these indirect role assignments and automatically assigns the authorizations to the users. This means that you, as the authorization administrator, develop activity-specific roles. These roles are then assigned to positions, jobs, work centers, or superordinate organizational units.



If a role is assigned to a very large number of users using your link in the HR-ORG model, it is better for performance reasons for the user master comparison to assign this role to the users directly using user maintenance (such as transaction SU10).

To create the direct role assignments, the user master comparison uses the rules contained in evaluation path US_ACTGR (table T77AW) to link the role with the employee or user. The

rules describe how the user is determined, starting from the role, using the HR-ORG model links.

The evaluation path is delivered with default values; that is, you need to modify it to suit your requirements. As you can assign the role to any object type, you must adjust the evaluation path so that the direct assignment of the role to the user can be created during the user comparison. As soon as a valid evaluation path is available, you can assign the roles to the HR-ORG object types. This means that a user assigned to a position automatically receives the roles defined for the position. For more information about maintaining evaluation paths, see [Maintaining Evaluation Paths \[Extern\]](#).

You can use HR_ORG to assign single and composite roles with and without the use of central user administration in accordance with the rules of the composite roles resolution. However, this is a local assignment; that is, the role must exist in the system in which it is to be assigned.

Prerequisites

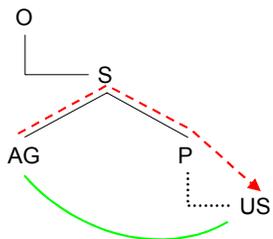
- You have defined an active plan variant in the current client.
- The infotype 0105 is maintained in the HR system, so that the connection between the employee and the user ID can be created.
- The Customizing switch HR_ORG_ACTIVE in table PRGN_CUST is set to **YES** to activate the HR-ORG management for role administration.
- The evaluation path US_ACTGR (table T77AW) is adjusted.
- You have shown the *Org.Management* button (transaction PFCG → *Goto* → *Settings* → *Complete View*).

Examples

Example 1

In our first example, the employees (P) are assigned the positions (S) in the HR system. This is the usual structure of an HR-ORG model, although you can also link users directly with the position, without using the object type P. The user ID (US) of the user is stored using the infotype 0105. At the same time, the role (AG) is also assigned to the position. From this indirect role assignment, the user master comparison generates the direct role assignment to the user. See the following graphic.

HR-ORG Model with Organizational Object Type *Employee*



Legend:

Indirect role assignment	---
Direct role assignment	—
Attribute assignment

Evaluation Path US_ACTGR in Table T77AW with Organizational Object Type *Employee*

Seq. Number	Object	Specification of the Linkage	Linkage	Priority	Type of the Linked Object
40	AG	A	007	*	S
50	AG	A	007	*	US
70	P	B	208	*	US
110	S	A	008	*	P

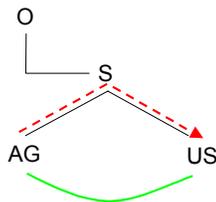
Explanations for the Evaluation Path

The evaluation path allows you to specify the connection between the role and user. Starting from the role, the user master comparison (transaction PFUD) reaches the associated position at sequence number 40. The connection between the position and the employee is described with sequence number 110. Sequence number 70 then describes the connection between employee and user. This corresponds to Infotype 0105. The result is the direct connection between the role and the determined user; that is, the role assignment. Sequence number 50 also displays the direct role assignments in role maintenance using the *Org. Management* button.

Example 2

Our second example describes a system in which the organizational object type *Employee* either does not exist or is not used. This structure usually arises when you are copying the HR-ORG model from an HR system to a SAP Web AS, which does not recognize the organizational object type *Employee*. Therefore, in this case, the user is assigned to the position, to which in turn the role is assigned. See the following graphic.

HR-ORG Model without Organizational Object Type *Employee*



Legend:

Indirect Role Assignment - - - - -
 Direct Role Assignment —————

Therefore there is a different evaluation path for systems with the organizational object type *Employee* to that for systems without this object type. The evaluation paths of these structures are in the table below.

Evaluation Path US_ACTGR in Table T77AW without Organizational Object Type *Employee*

Seq. Number	Object	Specification of the Linkage	Linkage	Priority	Type of the Linked Object
40	AG	A	007	*	S
50	AG	A	007	*	US
110	S	A	008	*	US

Explanations for the Evaluation Path

This evaluation path is different from the previous path in only one way: the object type P is not used. The connection between the position and the employee is therefore created directly with sequence number 110.

See also:

[Organizational Management \[Extern\]](#)



Assigning a Role Indirectly

1. Choose *Tools* → *Administration* → *User Maintenance* → *PFCG – Roles* (transaction PFCG).
2. Choose *Goto* → *Settings* → *Total View (Organizational Management and Workflow)*.
The *Org.Management* pushbutton is then displayed on the *User* tab page.
3. Specify the role that you want to assign indirectly, and choose *Display*.
4. Choose the *Org.Management* button on the *User* tab page.
The *Role: User Assignment* screen appears.
5. Switch to change mode, and choose the *Create Assignment* pushbutton.
The system displays the *Select processor type* dialog box, in which you can select some or all of the following object types, depending on the evaluation path: position, job, organizational unit, position, work center, and user.



The assignments for the *User* object type are then completely identical to the assignments maintained on the *User* tab page.

6. Select the object to which the role is to be assigned.
7. In the following dialog box, select an available object (for example, using the possible entries help) and choose *Create*.
The assignments created in this way are called indirect user assignments, as they are not made directly between the user and the role.
These indirect user assignments are stored as gray in the user display and highlighted in color.

Status Display and Maintenance

The status display in the *Org.Management* button shows whether you need to update the indirect user assignments:

- Green: User assignments are current
- Red: User assignments are not current, the indirectly assigned users are not completely displayed on the tab page.

Comparing the Indirect Role Assignments

You have the following options to update the assignment:

- Choose *Org.Management* and then *Compare indirect user assignment*.
- Perform the manual user master comparison that also automatically updates the indirectly assigned users.

- Schedule report PFCG_TIME_DEPENDENCY periodically. This report performs a complete comparison, consisting of HR-ORG, composite role, and profile comparisons.
- Create a variant of report RHAUTUPD_NEW (transaction PFUD), in which the *HR-ORG Comparison* indicator is set on the selection screen, and schedule this variant periodically.
- Call transaction PFUD and set the indicator *HR-ORG comparison* on the selection screen

This means that all indirectly assigned users for which the assignment has become valid on the basis of the assignment period are directly assigned to the role, and all directly assigned users for which the assignment has become invalid are removed.

See also:

SAP Note 578271: *PFCG integration of role assignment maintenance in PPOME*

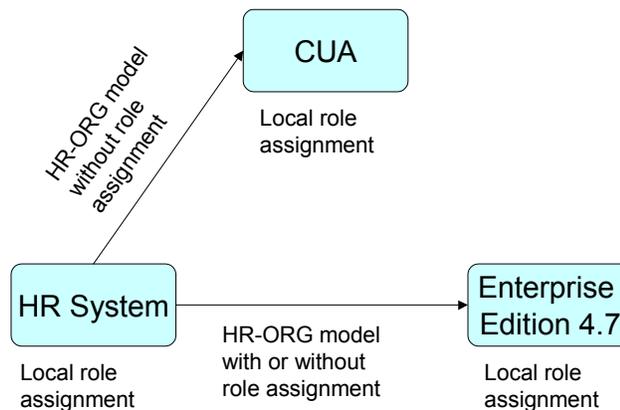
Indirect Role Assignment in a System Landscape

The following scenarios are examples for the use of indirect role assignment in a system landscape:

- You are using indirect role assignment in every system of your system landscape. You may also be using Central User Administration, with which you perform role assignments directly in each system (the *Role Assignment* parameter is set to `Local`). To do this, you must distribute your HR-ORG model that you maintain, for example, in your HR system, to all systems (see [Distribution \[Page 10\]](#)). You can either maintain the role assignments in the HR-ORG model in the source system and distribute them with the model and maintain the assignments in all target systems.
 - i Maintaining role assignments in the source system and distributing them with the model

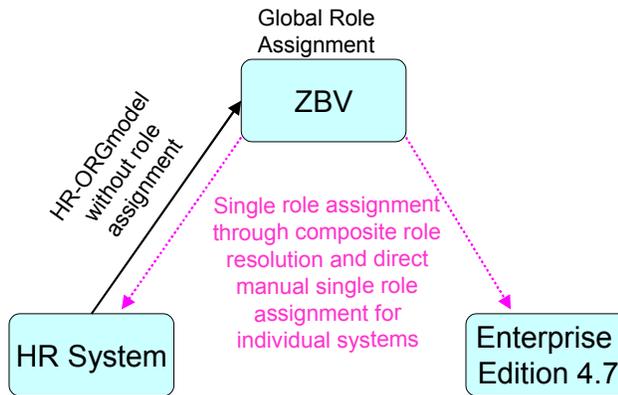
You want to have the same role assignments in every system. To achieve this, the used roles must exist in **all** systems.
 - i Maintaining the role assignment in the target systems:

You make individual role assignments in each system.

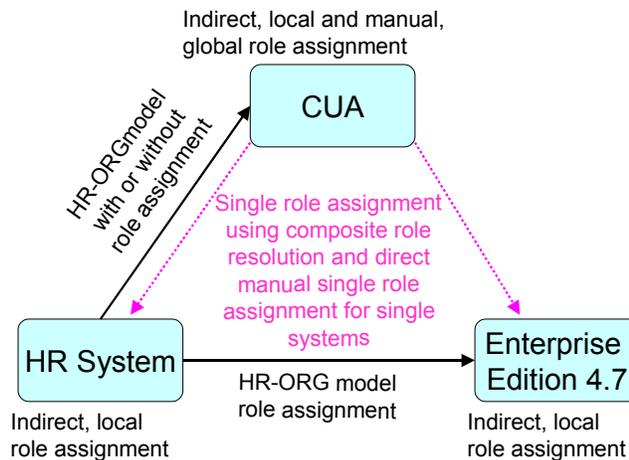


- You are using indirect role assignment only in the central system of Central User Administration. You maintain the HR-ORG model without role assignment, for example in your HR system, and distribute it to the CUA central system. Global role assignment

is active (the *Role Assignment* parameter is set to `Global`), meaning that you can use composite roles with target system-specific single roles. The indirect role assignment creates only **local** direct role assignments. In our example, in which the HR-ORG model was distributed to the CUA central system, these direct role assignments are therefore created in the CUA central system. If you now use composite roles, the system also creates direct assignments of the user to the single roles in the relevant systems, which arise from the composite role definition.



- You are using a combination of the above scenarios, such as using a CUA central system with global role assignment. In this way, you can maintain role assignment for all systems manually. You can also distribute the HR-ORG model to all systems to make local indirect role assignments. This means that you can make indirect role assignments in every child system of the CUA using HR-ORG, although you cannot enter any direct role assignments manually.



Distributing the HR-ORG Model

Use

You want to distribute the HR-ORG model that you have created in your HR system to one or more systems (see [scenarios \[Page 9\]](#)) to use it to perform indirect role assignment in these systems.

You should usually only distribute the required objects when distributing the HR-ORG model. In this description, only the objects required for user administration are distributed.

The distribution process is dependent on the following factors, which you must also consider later when making the filter settings for the HR-ORG model:

- Maintaining the role assignments in the HR-ORG model: If you make the role assignments in the HR-ORG model in the source system and distribute them together with the model, use authorizations in the receiving system to ensure that no user can change the HR-ORG model. If you perform the distribution without links to roles, you should still use authorizations to ensure in the receiving system that no user can change the objects of the HR-ORG model. Only the role assignments may be changed.
- Existence of the *Employee* organization object type: If at least **one** of the target systems does not know the employee object type (that is, it is not an HR system), the assignment of position to employee must be replaced by the assignment of position to user during the distribution process. To do this, create a Customer Exit that adds the position - user relationships in addition to the existing position - employee - user relationships. The ALE exit filters then delete the relationships that cannot be used, depending on the target system.

Prerequisite

- The 0105 infotype for the employee is maintained.
- You have ensured that the same active plan version has the value 01 both in the HR system and in the target system. This parameter is in table T77S0, group PLOGI, and semantic abbreviation PLOGI.
- The used users all exist in all systems (through CUA distribution or client copy).

Process Flow

If you are distributing the HR-ORG model with the user assignment from an HR system to an HR system and a non-HR system, the process flow is as follows:

1. [Create the HR-ORG distribution model in the HR system \[Page 12\]](#). When doing this, ensure that you maintain infotype 0105 in particular.
2. [Generate partner profiles in the HR and CUA central systems \[Page 13\]](#).
3. If one of the target systems does not know the *Employee* object type, [create an outbound filter with customer exit in the HR system \[Page 14\]](#).
4. So that you can later distribute only the changed data of the HR-ORG model, [activate the change pointers \[Page 15\]](#) and, if necessary, [write the change pointers for Infotype 0105 \[Page 15\]](#) (for target systems that do not know the *Employee* object type).
5. [Distribute the entire HR-ORG model. \[Page 16\]](#)
6. [Distribute the changes to the HR-ORG model \[Page 17\]](#)

See also:

- SAP Note 200343: HR-CA-ALE: Composite SAP Note: Distribution of HR Master Data
- SAP Note 363187: HR-CA-ALE: Initial Distribution with HRMD_A/HRMD_ABA (Tips)
- SAP Note 200066: *HR-CA-ALE: Q&A for Setting Up HR-ALE-Scenarios*
This note contains links to the QuickStart documentation for ALE and the ALE HR business processes.
- SAP Note 581019: *Distribute PFCG HR-ORG model for indirect role*



Creating an HR-ORG Distribution Model in the Sending System

Use

To be able to copy the HR_ORG model to other systems, you must first create a corresponding distribution model. This distribution model is a view of the HR-ORG model that is then distributed instead of the entire HR-ORG model. Note the settings of the outbound filter, especially if you are using the customer exit.

Procedure

1. In the sending system (HR system) choose *Tools* → *ALE and EDI* → *Administration* → *Runtime Settings* → *Partner Profiles* (transaction BD64).
2. In change mode, choose *Create Model View* and enter the following data:

Field	Value
Short text	Description of the distribution model (for example: HR-ORG Distribution Model)
Technical name	Technical name of the distribution model (such as HR_ORG)

3. Choose *Insert Message Type* and enter the following data:

Field	Value
Model view	HR_ORG
Sender	Logical name of the HR system
Receiver	Logical name of the receiving system
Message Type	HRMD_ABA

4. Expand the *HR-ORG Distribution Model* node.
5. Define a filter for the distribution model by double clicking the option *No Filter Set*.

The system displays the *Edit Filter* dialog box.

The filters described below reduce the distribution of the HR-ORG model to the objects that are significant for user administration.

- a. Choose *Create Filter Group* and expand the *Data Filtering* node.
- b. Call the *Edit Value List* dialog box by double clicking the *Infotype* node.
- c. Enter the data required in accordance with the lists below using the *Insert Line* button () and choose *Copy*.
- d. Call the *Edit Value List* dialog box by double clicking the *Object type* node.
- e. Enter the data required in accordance with the lists below using the *Insert Line* button () and choose *Copy*. In addition to the required object types, you can also enter the object types specified in brackets.

Filter Setting for the HR System as Target System

§ Filter Group for Relations

- Infotype: 1001, 0105
- Object type: O, P, S (possible additional object types: C)
- Type of the linked object: **AG**, O, P, S (possible additional object types: C, T, TS, UG, US, and WF)

§ Filter Group for Organizational Objects

- Infotype: 1000
- Object type: O, S (possible additional object types: C)



The organizational object types defined in the filter are distributed, meaning that P (employee) must be retained in the filter, but not US (user). If relationships between the position and the user were created by the [customer exit \[Page 14\]](#), this prevents the setting that these relationships occur in the HR system.

If you want to distribute the relationship of the role of the HR-ORG model, you must include the object type AG in the filter.

Filter Setting for non-HR Systems as Target Systems

§ Filter Group for Relations

- Infotype: 1001
- Object type: O, S (possible additional object types: C)
- Type of the linked object: **US, AG**, O, S (possible additional object types: C, T, TS, UG, and WF)

§ Filter Group for Organizational Objects

- Infotype: 1000
- Object type: O, S (possible additional object types: C)



The organizational object types defined in the filter are distributed, meaning that US (user) must be retained in the filter, but not P (employee). If relationships between the position and the employee and the employee and the user were created by the [customer exit \[Page 14\]](#), this prevents the setting that these relationships occur in the non-HR system.

If you want to distribute the relationship of the role of the HR-ORG model, you must include the object type AG in the filter.

6. Distribute the model view by choosing *Edit* → *Model View* → *Distribute to All Receiving Systems*.



Generating Partner Profiles of the HR-ORG Distribution Model

Use

Perform these procedures both in the HR system and in the receiving system of the HR-ORG distribution model.



Choose serial background processing for the incoming processing. In this way, you can avoid two background jobs being run in parallel, as this can easily cause update problems.

If the system displays an error message in transaction WE02, saying that the object was locked, check the background processing of the IDocs.

Procedure

1. Choose *Environment* → *Generate Partner Profile* in transaction BD64.
The system displays the *Generating Partner Profile* screen.
2. Specify the model view and the receiving system.
3. Under inbound parameters, choose the option *Trigger by Background Program*.



To be able to use background processing, you must then schedule the report RBDAPP01 for the message type HRMD_ABA in all receiving systems. The IDocs of the HR-ORG model are updated sequentially by the background processing. This avoids lock problems.

4. Check the result log for the partner profile generation in the sending and receiving systems.
 - If message type HRMD_ABA was not generated correctly in the sending system, adjust the outbound processing in transaction WE20.
 - i. On the *Partner Profiles* screen (transaction WE20), choose the partner profile of the sending system under *Partner type LS*.
 - ii. Check whether message type HRMD_ABA is listed under *Outbound parameters*.

If not, add it with *Create Outbound Parameter*. On the *Partner Profiles: Outbound Parameters* screen, you can specify the following data:

- *Outbound Options* tab page: Message type: HRMD_ABA, process code: HRMD, syntax check, triggered by background program
- *Postprocessing* tab page: Allowed Processor: Type: US, Processor: User name of the administrator, Language: EN

If message type HRMD_ABA was not generated correctly in the receiving system, adjust the inbound processing in transaction WE20.

- i. On the *Partner Profiles* screen (transaction WE20), choose the partner profile of the sending system under *Partner type LS*.
- ii. Check whether message type HRMD_ABA is listed under *Inbound parameters*.

If not, add it with *Create Inbound Parameter*. On the *Partner Profiles: Inbound Parameters* screen, you can specify the following data:

- *Inbound Options* tab page: Message type: HRMD_ABA, process code: HRMD, syntax check, triggered by background program
- *Postprocessing* tab page: Allowed Processor: Type: US, Processor: User name of the administrator, Language: EN



Creating an Outbound Filter with Customer Exit

Use

If one of the target systems does not know the object type *Employee*, you must replace the relationship between the position and the employee in the HR system with the relationship between the position and the user. The infotype 0105 links the employee with a user ID.

The customer exit time-dependently inserts the S-US relationships in addition to the S-P-US relationships. The ALE Filter filters out either the S-US relationships or the S-P relationships, depending on whether or not the system knows the object type *Employee*. In target systems with the object type *Employee*, the S-P-US relationships are retained, and in target systems without the *Employee* object type, the S-US relationships are retained. It is therefore vital that you have maintained the filter settings correctly.

Procedure

1. Call the transaction CMOD in the HR system.
2. Create a project and assign the enhancement RHALE001 to it by choosing *Enhancement Assignments*.
3. Insert a filter by choosing the *Components* pushbutton and double clicking EXIT_SAPLRHA0_001.
4. Enter the include name RPRGN_XHALU01 in include ZXHALU01 of function module EXIT_SAPLRHA0_001.
If the include is not yet available to you, import the correction instructions from SAP Note 581019.
5. Generate the function group.
6. Activate the include, the function, and the project.



Activating Change Pointers

Use

You can activate change pointers in the HR system to avoid distributing the entire structure when you make changes to the HR-ORG model, and distribute instead only the changes that you have made.

Procedure

1. In the Implementation Guide (IMG, transaction SALE), choose *Modeling and Implementing* → *Master Data Distribution* → *Replication of Modified Data* → *Activate Change Pointers - Generally*.
2. Set the activation status *Activate Change Pointers - Generally*, and save your entry.
3. Choose the activity *Activate Change Pointers for Message Types*.
4. Set the *active* indicator for the message type HRMD_ABA.
5. Save your entries.



Writing Change Pointers for Infotype 0105

Use

If you are using change pointers and at least one target system for the distribution of the HR-ORG model does not know the object type *Employee*, changes to the infotype 0105 are not distributed to this target system. However, change pointers for the infotype 0105 are recorded. As the infotype 0105 is not distributed, however, the associated change pointers are ignored. You must therefore explicitly write change pointers for the linked position with a dynamic task in this case.

If you change infotype 0105, the dynamic task is automatically started when these changes are saved. It writes change pointers for the positions to which the employee is assigned. The change pointers of the position are taken into account during the next distribution process. As the Customer Exit adds the links to the user, the changes to infotype 0105 are also taken into account.

Procedure

1. Create the program Z_RPRGN_WRITE_CHANGE_POINTER in accordance with the instructions in SAP Note 581019.
2. Activate the program in Customizing. To do this, in the Implementation Guide (transaction SPRO), choose *Personnel Management* → *Personnel Administration* → *Customizing Procedures* → *Dynamic Actions*.
3. Create the following table entry by choosing *New Entries*:

ITy	FC	No.	A	Variable Function Part
0105	00	0	F	pa0105_change(Z_RPRGN_WRITE_CHANGE_POINTER)

For more information about dynamic actions, see the documentation for this IMG activity.



Distribute HR-ORG-Model (Initial Distribution)

Use

Perform the following steps in order with report RHALEINI:

1. Make a preselection of the data to be distributed on the selection screen of the report.
2. The report automatically filters the data with the filters defined in the distribution model.
3. The report automatically filters the data with the outbound filter of the Customizing exit.
4. The report distributes the data that has been selected to the receiving system.

Procedure

1. Start the report RHALEINI with transaction SA38.
2. Specify the following data:

Field	Value:
Plan variant	01
Object type	
Object ID	Relevant HR structure
Evaluation period	All
Evaluation value	O-S-P Staff assignments along organizational structure With this path you can choose the data that is relevant for user administration.
Transfer mode	Insert This mode inserts the data to be distributed by overwriting

Receiver Partner Number	Logical name of the receiving system
-------------------------	--------------------------------------

3. Choose *Execute*.



Distribute Changes to the HR_ORG Model

Use

With this procedure, you can distribute only the delta of changed data for the HR-ORG model to the receiving systems.

Procedure

1. Call transaction BD21 or schedule this report transaction as a background job.
2. Choose message type HRMD_ABA and then *Execute*.



With the report RHALECPS, you can evaluate the change pointer.