



One Identity Manager 8.1.3

System Roles Administration Guide

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**Legend**

 **WARNING:** A WARNING icon highlights a potential risk of bodily injury or property damage, for which industry-standard safety precautions are advised. This icon is often associated with electrical hazards related to hardware.

 **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

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## Managing system roles

System roles make it easier to assign company resources that are frequently required or rather that are always assigned together. For example, new employees in the finance department should be provided, by default, with certain system entitlements for Active Directory and for SAP R/3. In order to avoid a lot of separate assignments, group these company resources into a package and assign this to the new employee. The packages are referred to as system role in One Identity Manager.

Using system roles, you can group together arbitrary company resources. You can assign these system roles to employees, workdesks, or roles or you can request them through the IT Shop. Employees and workdesks inherit company resources assigned to the system roles. You can structure system roles by assigning other system roles to them.

One Identity Manager components for managing system roles are available if the "QER | ESet" configuration parameter is set.

- In the Designer, check if the configuration parameter is set. Otherwise, set the configuration parameter and compile the database.

## One Identity Manager users for managing system roles

The following users are used for setting up and administration of system roles.

**Table 1: Users**

User	Tasks
Employee responsible for individual company resources	<p>The users are defined using different application roles for administrators and managers.</p> <p>Users with these application roles:</p> <ul style="list-style-type: none"> <li>• Create and edit system roles.</li> <li>• Assign system roles to departments, cost centers, locations, business roles, or the IT Shop.</li> </ul>

User	Tasks
	<ul style="list-style-type: none"> <li>• Assign system roles to employees.</li> <li>• Assign system roles to workdesks.</li> </ul>
One Identity Manager administrators	<ul style="list-style-type: none"> <li>• Create customized permissions groups for application roles for role-based login to administration tools in the Designer as required.</li> <li>• Create system users and permissions groups for non role-based login to administration tools in the Designer as required.</li> <li>• Enable or disable additional configuration parameters in the Designer as required.</li> <li>• Create custom processes in the Designer as required.</li> <li>• Create and configure schedules as required.</li> <li>• Create and configure password policies as required.</li> </ul>
Product owner for the IT Shop	<p>Product owners must be assigned to the <b>Request &amp; Fulfillment   IT Shop   Product owners</b> application role or a child application role.</p> <p>Users with this application role:</p> <ul style="list-style-type: none"> <li>• Approve through requests.</li> <li>• Edit service items and service categories under their management.</li> </ul> <p>The <b>Request &amp; Fulfillment   IT Shop   Product owners   System roles</b> default application role can be used.</p>

## Basics of calculating inheritance

Any number of company resources and other system roles can be assigned to system roles. This means you can structure system roles hierarchically. The assignments are mapped in the ESetHasEntitlement table. The system role hierarchy is mapped through the UID\_ESet - Entitlement relation. This is stored in the ESetCollection table. All the system roles are listed that the given system role inherits from. Each role also inherits from itself.

The following relations apply in the ESetCollection table:

- UID\_ESet is the system role that inherits.
- It inherits from the UID\_ESetChild system role.

The ESetHasEntitlement table contains the direct assignment ( $XOrigin = 1$ ) and all system roles that are assigned to the child system roles ( $XOrigin = 2$ ). The company resources that are assigned to a child system role are not resolved until inheritance for employees, workdesks, and hierarchical roles is calculated.

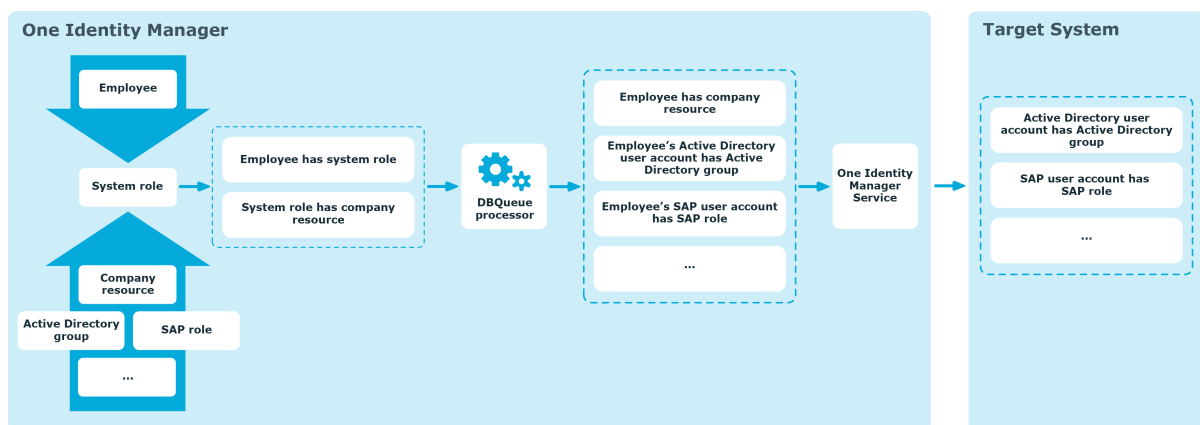
## Related topics

- [Example of a system role hierarchy](#) on page 24

# Technical details for calculating inheritance

Objects assigned through inheritance are calculated by the DBQueue Processor. Tasks are added to the DBQueue when assignments relevant to inheritance are made. These tasks are processed by the DBQueue Processor and result in follow-on tasks for the DBQueue or in processes for process component `HandleObjectComponent` in the Job queue. Resulting assignments of permissions to user accounts in the target system are inserted, modified, or deleted during process handling.

**Figure 1: Overview of inheritance calculation**



## Details of system role inheritance

System roles can be assigned to employees and workdesks in the following ways:

- Direct assignment
- IT Shop request
- Inheritance through hierarchical roles
- Inheritance through dynamic roles

System role assignments are mapped in the `ESetHasEntitlement` table. Assignment of system roles to hierarchical roles are mapped in the `BaseTreeHasESet` table.

Employees can directly obtain system roles. Employees continue to inherit all (including inherited) the system roles belonging to all hierarchical roles of which they are members (table `PersonInBasetree`) as well as system roles of all hierarchical roles that are referenced through foreign key relations (`Person` table, `UID_BaseTree` column). Direct and

indirect assignments of system roles to employees are mapped in the PersonHasESet table. This behavior applies in the same way for assignments of system roles to workdesks.

An employee (workdesk, hierarchical role) inherits everything that is assigned to the assigned system role. Child system roles are resolved in this case. Prerequisite is that each company resource can really be inherited.

- The employee must own a user account in this target system in order to inherit a target system entitlement.

For more detailed information about editing role classes, see the *One Identity Manager Identity Management Base Module Administration Guide* and the *One Identity Manager Business Roles Administration Guide*.

## Detailed information about this topic

- [Example of inheritance routes](#) on page 25

# Effectiveness of system roles

By assigning system roles to employees, workdesks, or hierarchical roles, an employee may obtain company resources, which should not be assigned in this combination. To prevent this, you can declare mutually exclusive system roles. To do this you specify which system role of a pair of system roles, should be take effect if both are assigned. No company resources are inherited by the system role which is not effective.

## Prerequisite

- The "QER | Structures | Inherit | ESetExclusion" configuration parameter is enabled.

It is possible, to assign employees, workdesks, and company resources directly, indirectly, or by IT Shop request to an excluded system role. This can be done at any time. One Identity Manager subsequently determines whether the assignment takes effect and the company resources are inherited.

### NOTE:

- You cannot define a pair of mutually exclusive system roles. That means, the definition "System role A excludes System role B" AND "System role B excludes System role A" is not permitted.
- You must declare each system role to be excluded from a system role separately. Exclusion definitions cannot be inherited.

The effect of the assignments is mapped in the PersonHasESet, BaseTreeHasESet, and WorkdeskHasESet tables through the XIsInEffect column.

**NOTE:** If a company resource assigned to an excluded system role, is assigned directly or indirectly to an employee, or workdesk, the exclusion definition does not affect this company resource. The exclusion definition only applies to the system roles.



## Example for the effectiveness of system roles

- The system role "Marketing" contains all the applications and permissions for triggering requests.
- The system role "Finance" contains all the applications and permissions for instructing payments.
- The system role "Controlling" contains all the applications and permissions for verifying invoices.

Scenario:

Clara Harris directly assigns the system role "Marketing". She obtains the "Finance" system role and the "Controlling" system role through an IT Shop request. Clara Harris obtains all the system roles without an exclusion definition and therefore the associated permissions.

By using suitable controls, you want to prevent an employee from being able to trigger a request and also pay invoices. That means, the "Finance" and "Marketing" are system roles mutually exclusive. An employee that checks invoices may not be able to make invoice payments as well. That means, the "Finance" and "Controlling" system roles are mutually exclusive.

**Table 2: Specifying mutually exclusive system roles (table ESetExcludesESet)**

<b>Effective business role</b>	<b>Excluded System Role</b>
Finance	Marketing
Controlling	Finance

**Table 3: Effective assignments**

<b>Employee</b>	<b>Assigned system role</b>	<b>Effective business role</b>
Ben King	Marketing	Marketing
Jan Bloggs	Marketing, finance	Finance
Clara Harris	Marketing, finance, controlling	Controlling
Jenny Basset	Marketing, Controlling	Marketing, Controlling

Only the "Controlling" system role is in effect for Clara Harris. If the "Controlling" system role is removed from Clara, the "Finance" system role assignment is reinstated.

Jenny Basset retains the "Marketing" and "Controlling" system roles because there is no exclusion defined between the two system roles. That means that the employee is authorized to trigger request and to check invoices. If you want to prevent that as well, define further exclusion for the "Controlling" system role.

**Table 4: Excluded system roles and effective assignments**

<b>Employee</b>	<b>Assigned system role</b>	<b>Excluded System Role (UID_ ESetExcluded)</b>	<b>Effective business role</b>
Jenny Basset	Marketing		Controlling
	Controlling	Finance Marketing	

### Detailed information about this topic

- [Effect of exclusion definitions](#) on page 27
- [Special features of inheritance through hierarchical roles](#) on page 29

### Related topics

- [Excluding system roles](#) on page 22

## Disabled system roles

System roles can be disabled to temporarily to prevent, for example, employees and workdesks from inheriting their company resources. If a system role is disabled, the DBQueue Processor recalculates inheritance of its company resources. Existing assignments to employees and workdesks are removed. The disabled system role remains assigned however, the assignment no longer has any effect (`PersonHasESet.XIsInEffect = ∅`). Once the system role is re-enabled, company resource inheritance is recalculated again. The company resources contained in the system role are assigned to employees and workdesks.

You cannot request a disabled system role in the Web Portal but you can assign it directly to employees, workdesks, hierarchical roles, dynamic roles, and IT Shop shelves.


### Related topics

- [General master data for system roles](#) on page 12

## System role types


System role types identify the type of company resources that the system role is used to grouped together. You can, for example, define system role types for system roles in which you group different target system groups.

### **To edit a system role type**

1. Select the **Entitlements | Basic configuration data | System role types** category.
2. Select a system role type in the result list. Select the **Change master data** task.  
– OR –  
Click  in the result list.
3. Enter a name and description for the system role type.
4. Save the changes.

## Editing system roles

### To edit system roles

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list. Select the **Change master data** task.  
- OR -  
Click  in the result list.
3. Edit the system role's master data.
4. Save the changes.

## General master data for system roles

Enter the following data for a system role.

**Table 5: System role master data**

Property	Description
Display name	Name for displaying the system roles in One Identity Manager tools.
System role	Unique identifier for the system role.
Internal product name	An additional internal name for the system role.
System role type	Specifies the type of company resources, which comprise the system role.
Service item	In order to use a service item within the IT Shop, assign a service item to it or add a new service item. For more information about service items, see the One Identity Manager IT Shop Administration Guide.

Property	Description
System role manager	<p>Manager responsible for the system role. Assign any new employee. This employee can edit system role master data. They can be used as attestors for system role properties.</p> <p>If the system role can be requested in the IT Shop, the manager will automatically be a member of the application role for product owners assigned the service item.</p>
Share date	<p>Specify a date for enabling the system role. If the date is in the future, the system role is considered to be disabled. If the date is reached, the system role is enabled. Employees inherit company resources that are assigned to the system role.</p> <p>If the share date is exceeded or no date is entered, the system role is handled as an enabled system role. Company resource inheritance can be controlled with the <b>Disabled</b> option in these cases.</p> <p><b>NOTE:</b> Configure and enable the <b>Share system roles</b> schedule in the Designer to check the share date. For detailed information about schedules, see the <i>One Identity Manager Operational Guide</i>.</p>
Risk index (calculated)	<p>Maximum risk index values for all company resources. The property is only visible if the <b>QER   CalculateRiskIndex</b> configuration parameter is enabled. For detailed information about calculating the risk index, see the <i>One Identity Manager Risk Assessment Administration Guide</i>.</p>
Comment	Text field for additional explanation.
Remarks	Text field for additional explanation.
Description	Text field for additional explanation.
Deactivated	<p>Specifies whether employees and workdesks inherit the company resources contained in the system role.</p> <p>If this option is set, the system role can be assigned to employees, workdesks, hierarchical roles, and IT Shop shelves. However they cannot inherit the company resources contained in the system role. The system role cannot be requested in the Web Portal.</p> <p>If this option is not set, company resources assigned to the system role are inherited. If the option is enabled at a later date, existing assignments are removed.</p>
IT Shop	<p>Specifies whether the system role can be requested through the IT Shop. This system role can be requested by staff through the Web Portal and the request granted by a defined approval procedure. The system role can still be assigned directly to employees and hierarchical roles. For detailed information about IT Shop, see the <i>One Identity Manager IT Shop Administration Guide</i>.</p>
Only for	Specifies whether the system role can only be requested through the IT

Property	Description
use in IT Shop	Shop. This system role can be requested by staff through the Web Portal and the request granted by a defined approval procedure. The system role may not be assigned directly to hierarchical roles.
Spare field no. 01 ... Spare field no. 10	Additional company-specific information. Use the Designer to customize display names, formats, and templates for the input fields.

### Detailed information about this topic

- [Disabled system roles](#) on page 10

## Assigning company resources to system roles

Assign the company resources you want to group together into one package, to the system role. When you assign system roles to employees and workdesks, the company resources are inherited by the employees and workdesks.

**NOTE:** Company resources with **Only use in IT Shop** can only be assigned to system roles that also have this option set.

**NOTE:** Company resources are defined in the One Identity Manager modules and are not available until the modules are installed.

The following table lists the company resources you can assign to system roles.

**Table 6: Possible assignments of company resources to system roles**

Company Resource	Available in Module
Resources	always
Account definitions	Target System Base Module
Groups of custom target systems	Target System Base Module
Active Directory groups	Active Directory Module
SharePoint groups	SharePoint Module
SharePoint roles	SharePoint Module
LDAP groups	LDAP Module
Notes groups	IBM Notes Module

<b>Company Resource</b>	<b>Available in Module</b>
SAP groups	SAP R/3 User Management Module
SAP profiles	SAP R/3 User Management Module
SAP roles	SAP R/3 User Management Module
Structural profiles	SAP R/3 Structural Profiles Add-on Module
BI analysis authorizations	SAP R/3 Analysis Authorizations Add-on Module
E-Business Suite permissions	Oracle E-Business Suite Module
System roles	System Roles Module
Subscribable reports	Report Subscription Module
Software	Software Management Module
Azure Active Directory groups	Azure Active Directory Module
Azure Active Directory administrator roles	Azure Active Directory Module
G Suite groups	G Suite Module
G Suite products and SKUs	G Suite Module

### **To add company resources to a system role**

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the task to assign the corresponding company resource.
4. In the **Add assignments** pane, assign company resources.  
- OR -  
Remove the company resources in **Remove assignments**.
5. Save the changes.

## **Assigning system roles to workdesks and employees**

You can assign system roles directly or indirectly to employees or workdesks. In the case of indirect assignment, employees (workdesks) and system roles are grouped into hierarchical roles. The number of system roles is calculated from the position in the hierarchy and the direction of inheritance assigned to an employee (or workdesk).

## Prerequisites for indirect assignment to employees

- Assignment of employees and system roles is permitted for role classes (departments, cost centers, locations, or business roles).

## Prerequisite for indirect assignment to workdesks

- Assignment of workdesks and system roles is permitted for role classes (departments, cost centers, locations, or business roles).

Add employees to a shop as customers so that system roles can be assigned through IT Shop requests. All system roles assigned as product to this shop can be requested by the customers. Requested system roles are assigned to the employees after approval is granted.

**NOTE:** If the system role is disabled or if the share date is still in the future, the company resources are not inherited.

## Detailed information about this topic

- [Assigning system roles to departments, cost centers, and locations](#) on page 16
- [Assigning system roles to business roles](#) on page 17
- [Adding system roles to the IT Shop](#) on page 18
- [Assigning system roles directly to employees](#) on page 19
- [Assigning system roles directly to workdesks](#) on page 20
- [Adding a system role to system roles](#) on page 21

## Related topics

- [Assigning company resources to system roles](#) on page 14
- [Details of system role inheritance](#) on page 7

For more detailed information about the basic principles for assigning company resources, see the *One Identity Manager Identity Management Base Module Administration Guide*.

# Assigning system roles to departments, cost centers, and locations

Assign the system role to departments, cost centers, and locations for it to be assigned to employees and workdesks through these organizations.

## ***To assign a system role to departments, cost centers, and locations***


1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.



3. Select the **Assign organizations** task.
4. In the **Add assignments** pane, assign the organizations:
  - On the **Departments** tab, assign departments.
  - On the **Locations** tab, assign locations.
  - On the **Cost centers** tab, assign cost centers.

**TIP:** In the **Remove assignments** pane, you can remove assigned organizations.

**To remove an assignment**

- Select the organization and double-click .
5. Save the changes.

**NOTE:** In order for company resources assigned to the system role to be inherited by departments, cost centers, and locations, role classes must have the **Direct assignments allowed** option set. For more information about setting this option, see the One Identity Manager Identity Management Base Module Administration Guide.

### Related topics

- [Assigning system roles to business roles](#) on page 17
- [Adding system roles to the IT Shop](#) on page 18
- [Assigning system roles directly to employees](#) on page 19
- [Assigning system roles directly to workdesks](#) on page 20

## Assigning system roles to business roles

Installed modules: Business Roles Module


Assign the system role to business roles so that the system role can be assigned to employees and workdesks through business roles.

### To assign a system role to business roles

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **Assign business roles** task.
4. In the **Add assignments** pane, assign business roles.

**TIP:** In the **Remove assignments** pane, you can remove assigned business roles.

**To remove an assignment**

- Select the business role and double-click .
5. Save the changes.

**NOTE:** In order for company resources assigned to the system role to be inherited by business roles, role classes must have the **Direct assignments allowed** option set. For more information about setting this option, see the One Identity Manager Business Roles Administration Guide.

## Related topics

- [Assigning system roles to departments, cost centers, and locations](#) on page 16
- [Adding system roles to the IT Shop](#) on page 18
- [Assigning system roles directly to employees](#) on page 19
- [Assigning system roles directly to workdesks](#) on page 20

# Adding system roles to the IT Shop

A system role can be requested by shop customers when it is assigned to an IT Shop shelf. There are other prerequisites to take into account so that a system role can be requested.

- The system role must be labeled with the option **IT Shop**.
- The system role must be assigned to a service item.
- If the system role can only be assigned to employees using IT Shop requests, the system role must be also labeled with **Only use in IT Shop**. Then, the system role may no longer be assigned directly to hierarchical roles.

### ***To add a system role to the IT Shop***

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **Add to IT Shop** task.
4. In the **Add assignments** pane, assign the system role to IT Shop shelves.
5. Save the changes.

### ***To remove a system role from individual IT Shop shelves***

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **Add to IT Shop** task.
4. In the **Remove assignments** pane, remove the system role from the IT Shop shelves.
5. Save the changes.

### **To remove a system role from all IT Shop shelves**

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **Remove from all shelves (IT Shop)** task.
4. Confirm the security prompt with **Yes**.
5. Click **OK**.

The system role is removed from all shelves by the One Identity Manager Service. All requests and assignment requests with this system role are canceled in the process.

For more detailed information about the IT Shop, see the *One Identity Manager IT Shop Administration Guide*.

### **Related topics**

- [General master data for system roles](#) on page 12
- [Assigning system roles to departments, cost centers, and locations](#) on page 16
- [Assigning system roles to business roles](#) on page 17
- [Assigning system roles directly to employees](#) on page 19
- [Assigning system roles directly to workdesks](#) on page 20

## **Assigning system roles directly to employees**

System roles can be assigned directly or indirectly to employees. Indirect assignment is carried out by allocating the employee and system roles in company structures, like departments, cost centers, locations, or business roles.

To react quickly to special requests, you can assign system roles directly to employees. The employees obtain all company resources assigned to the system role.


**NOTE:** If the system role is disabled or if the share date is still in the future, the company resources are not inherited.

### **To assign a system role directly to employees**

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **Assign to employees** task.
4. In the **Add assignments** pane, add employees.

**TIP:** In the **Remove assignments** pane, you can remove assigned employees.

### **To remove an assignment**

- Select the employee and double-click .
5. Save the changes.

### **Related topics**

- [Assigning system roles to departments, cost centers, and locations](#) on page 16
- [Assigning system roles to business roles](#) on page 17
- [Adding system roles to the IT Shop](#) on page 18
- [Assigning system roles directly to workdesks](#) on page 20

## **Assigning system roles directly to workdesks**

System roles can be assigned directly or indirectly to a contact. Indirect assignment is carried out by allocating the workdesk and system roles in company structures, like departments, cost centers, locations, or business roles.

To react quickly to special requests, you can assign system roles directly to workdesks. The workdesks obtain all company resources assigned to the system role.


**NOTE:** The company resources are not inherited if the system role is disabled or if the share date is still in the future.

### **To assign a system role directly to workdesks**

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **Assign workdesks** task.
4. In the **Add assignments** pane, assign workdesks.

**TIP:** In the **Remove assignments** pane, you can remove assigned workdesks.

### **To remove an assignment**

- Select the workdesk and double-click .
5. Save the changes.

### **Related topics**

- [Assigning system roles to departments, cost centers, and locations](#) on page 16
- [Assigning system roles to business roles](#) on page 17
- [Adding system roles to the IT Shop](#) on page 18
- [Assigning system roles directly to employees](#) on page 19

# Adding a system role to system roles

Use this task to group different system roles into one package. This enables system roles to be structured from different view points.

**NOTE:** System roles with the **Only use in IT Shop** option set can only be assigned to system roles that also have this option set.

## *To assign a system role to system roles*

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **Assign system roles** task.
4. Select the **System role contained in** tab to assign parent system roles.
  - In the **Add assignments** pane, assign system roles.  
- OR -  
In the **Remove assignments** pane, remove the system roles.
5. Select the **System role contains** tab to assign child system roles.
  - In the **Add assignments** pane, assign system roles.  
- OR -  
In the **Remove assignments** pane, remove the system roles.
6. Save the changes.

# Additional tasks for managing system roles

After you have entered the master data, you can run the following tasks.

## System role overview

Use this task to obtain an overview of the most important information about a system role.

### *To obtain an overview of a system role*

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **System role overview** task.

# Assigning extended properties


Extended properties are meta objects, such as operating codes, cost codes, or cost accounting areas that cannot be mapped directly in One Identity Manager.

## **To specify extended properties for a system role**

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **Assign extended properties** task.
4. In the **Add assignments** pane, assign extended properties.

**TIP:** In the **Remove assignments** pane, you can remove assigned extended properties.

### **To remove an assignment**

- Select the extended property and double-click .
5. Save the changes.

For detailed information about extended properties, see the *One Identity Manager Identity Management Base Module Administration Guide*.

# Excluding system roles

Specify, which system role of a pair of system roles, should be take effect if both are assigned. No company resources are inherited by the system role which is not effective.

## **To exclude system roles**

1. Select the **Entitlements | System Roles** category.
2. Select the system role in the result list.
3. Select the **Edit conflicting system roles** task.
4. In the **Add assignments** pane, assign the system roles that are mutually exclusive to the selected system role.

- OR -

In the **Remove assignments** pane, remove the system roles that no longer exclude each other.

5. Save the changes.

## **Detailed information about this topic**

- [Effectiveness of system roles](#) on page 8

## Configuration parameters for system roles

The following configuration parameters are available in One Identity Manager after the module has been installed.

**Table 7: Configuration parameters for the module**

<b>Configuration parameter</b>	<b>Description</b>
QER   ESet	Preprocessor relevant configuration parameter for controlling the database model components for system roles. If this parameter is set, system components are available. Changes to this parameter require the database to be recompiled.
QER   Structures   Inherit   ESetExclusion	Preprocessor-relevant configuration parameter for defining the effectiveness of system roles. If this parameter is set, mutually excluding system roles can be defined. Changes to this parameter require the database to be recompiled.
QER   Structures   Inherit   NoESetSplitting	Specifies whether the components of a system role are already split in the hierarchical role (as previously) or not (current behavior). If this parameter is set, the system roles are not broken down into their individual components until the target of the inheritance.

## Examples of system role inheritance

The following example shows how inheritance of company resources through system roles works and what effect exclusion definitions have.

### Example of a system role hierarchy

The following tables show how assignments to system roles and the system role hierarchy is mapped in the One Identity Manager database.

**Table 8: System roles: assignments (ESetHasEntitlement)**

<b>System role (UID_ESet)</b>	<b>Assignment System Role (Entitlement)</b>	<b>Origin (XOrigin)</b>
System role A	System role A1	1
System role A	System role A2	1
System role A	System role A11	2
System role A	System role A12	2
System role A1	System role A11	1
System role A1	System role A12	1
System role A1	System entitlement	1
System role A2	Software	1
System role A11	Active Directory group	1
System role A12	SAP role	1
System role B	Resource	1

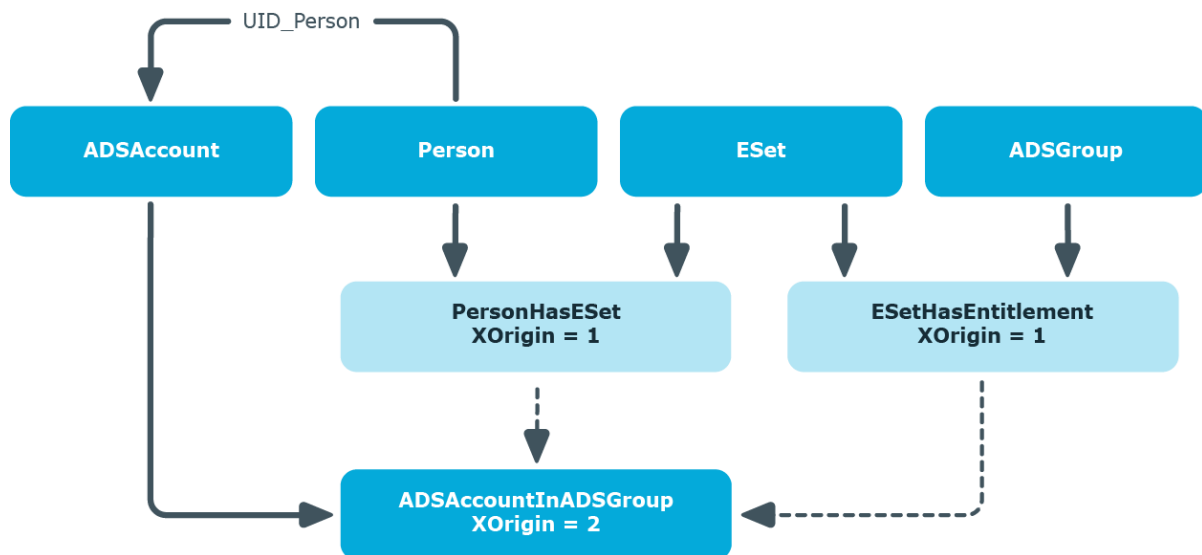


**Table 9: System role hierarchy (table ESetCollection)**

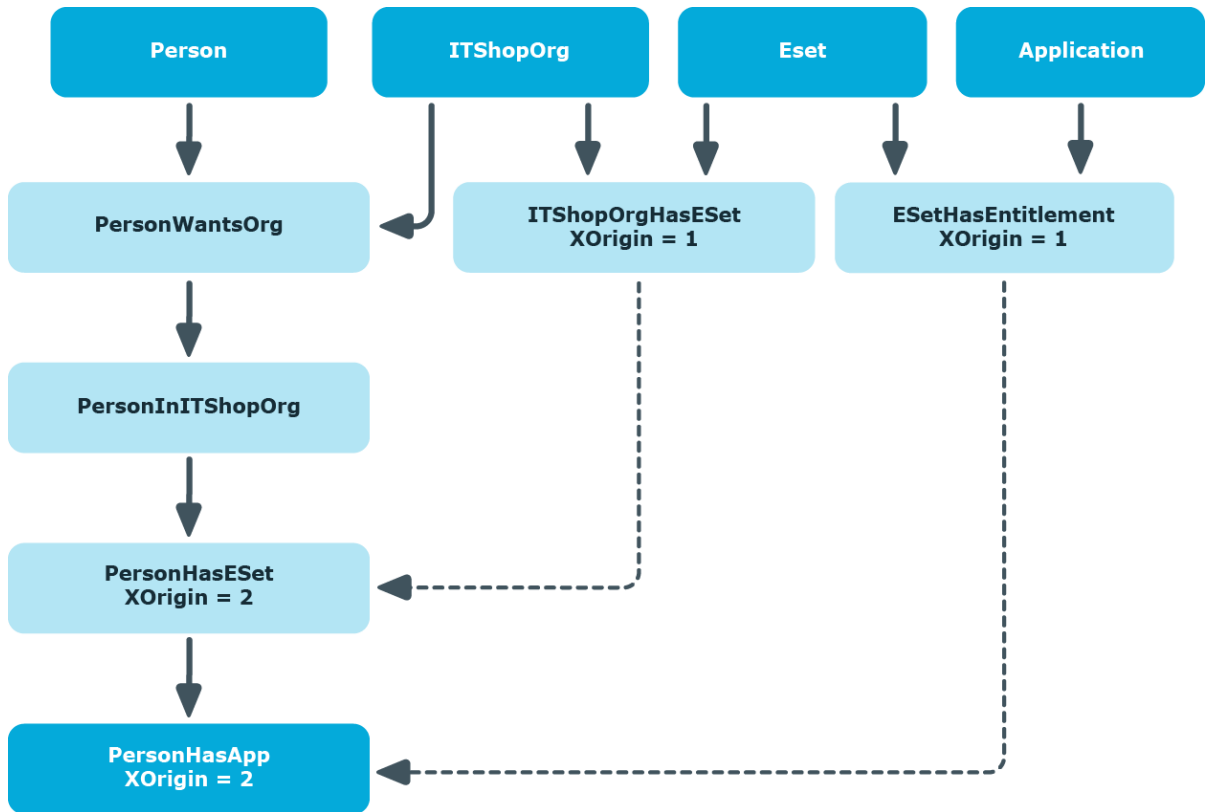
System role (UID_ESet)	Child System Role (UID_ESetChild)
System role A	System role A
System role A	System role A1
System role A	System role A2
System role A	System role A11
System role A	System role A12
System role A1	System role A1
System role A1	System role A11
System role A1	System role A12
System role A11	System role A11
System role A12	System role A12
System role A2	System role A2
System role B	System role B

## Example of inheritance routes

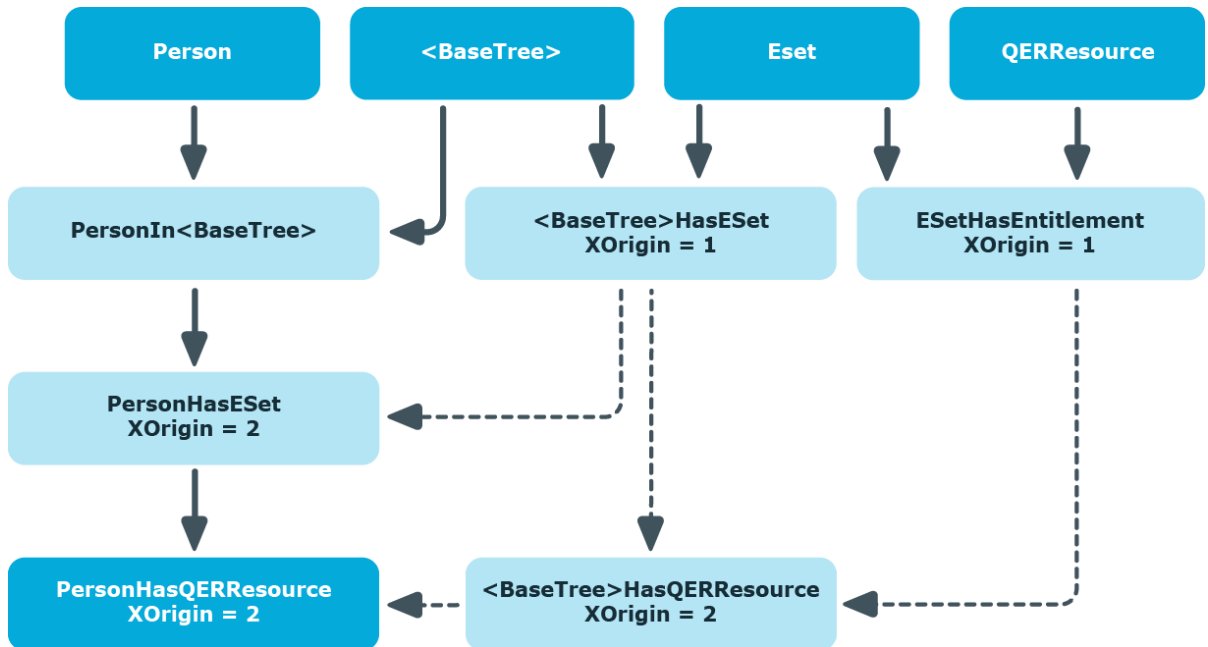
**Figure 2: Inheriting an Active Directory group through a directly assigned system role**



**Figure 3: Inheriting software through an IT Shop request**



**Figure 4: Inheriting a resource through an indirectly assigned system role**



# Effect of exclusion definitions

The following images show how exclusion excluding a system role affects how inheritance is calculated. Excluded system roles can still be assigned to employees. An option on the column `XIsInEffect` defines whether this assignment applies. Assigning an excluded system role leads to the entry `XIsInEffect = 0`, if the other system role from the exclusion definition is assigned at the same time.

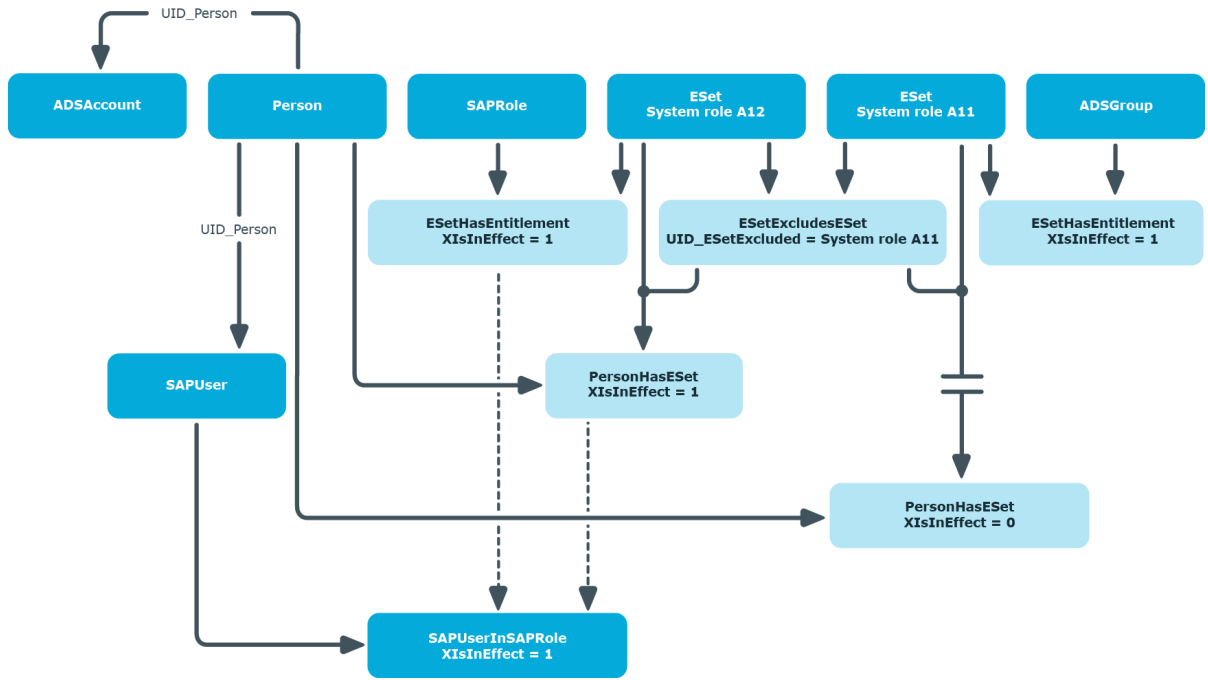
**Table 10: Excluded system roles (table `ESetExcludesESet`)**

System role (UID_ESet)	Excluded System Role (UID_ESetExcluded)
System role A12	System role A11
System role B	System role B1
System role B	System role A2

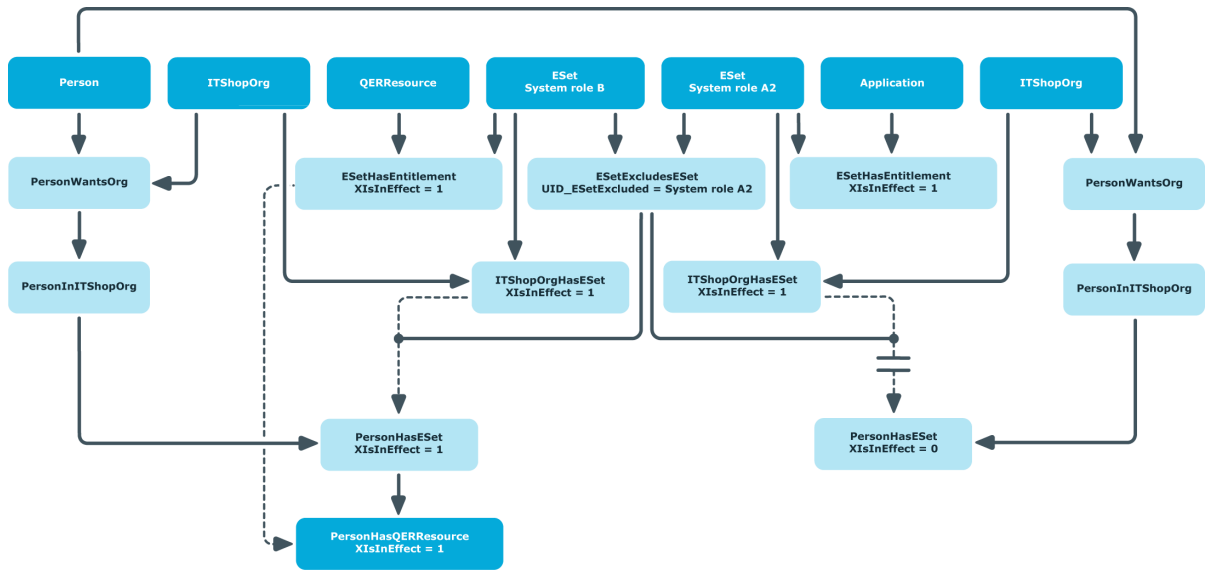
**Table 11: System roles: inheritance (table `ESetHasEntitlement`)**

System role (UID_ESet)	Assignment System Role (Entitlement)	Assignment Applies (XIsInEffect)
System role A	System role A1	1
System role A	System role A2	1
System role A	System role A11	0
System role A	System role A12	1
System role A1	System role A11	0
System role A1	System role A12	1
System role A2	Software	1
System role A11	Active Directory group	1
System role A12	SAP role	1
System role B	Resource R1	1
System role B1	Resource R2	1

**Figure 5: Inheritance through directly assigned system roles**



**Figure 6: Inheritance through an IT Shop request**



# Special features of inheritance through hierarchical roles

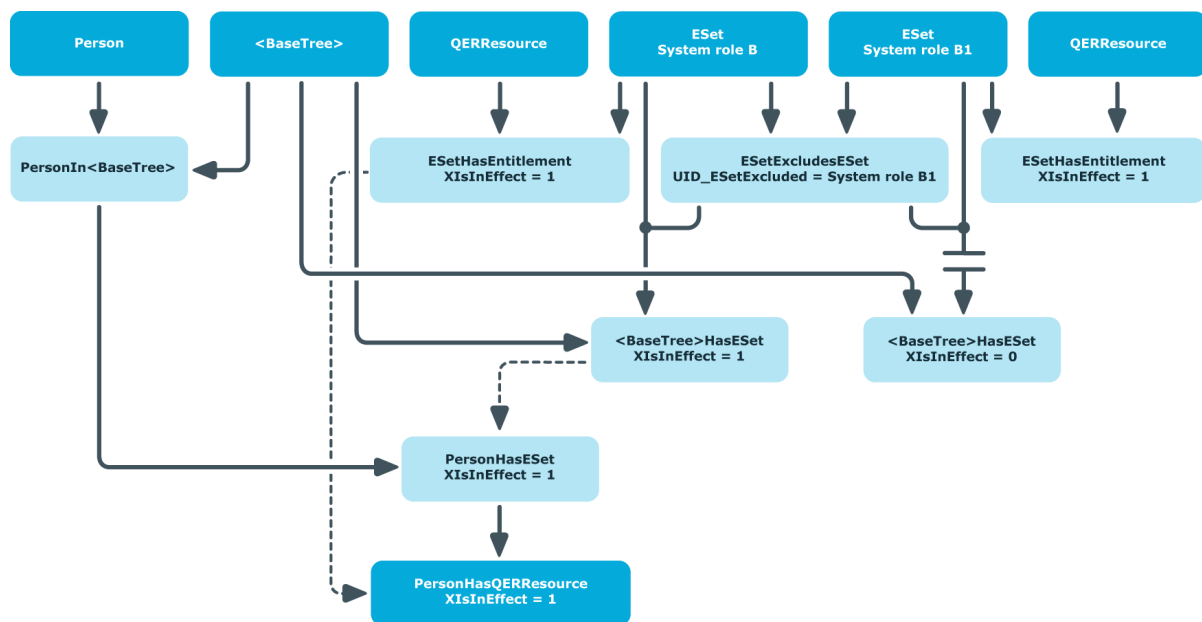
**Table 12: Configuration parameters for calculating assignments to hierarchical roles**

Configuration parameter	Effect when set
QER   Structures   Inherit   NoESetSplitting	Specifies whether or not the components of a system role are already split in the hierarchical role. If this parameter is set, the system roles are not broken down into their individual components until the target of the inheritance.

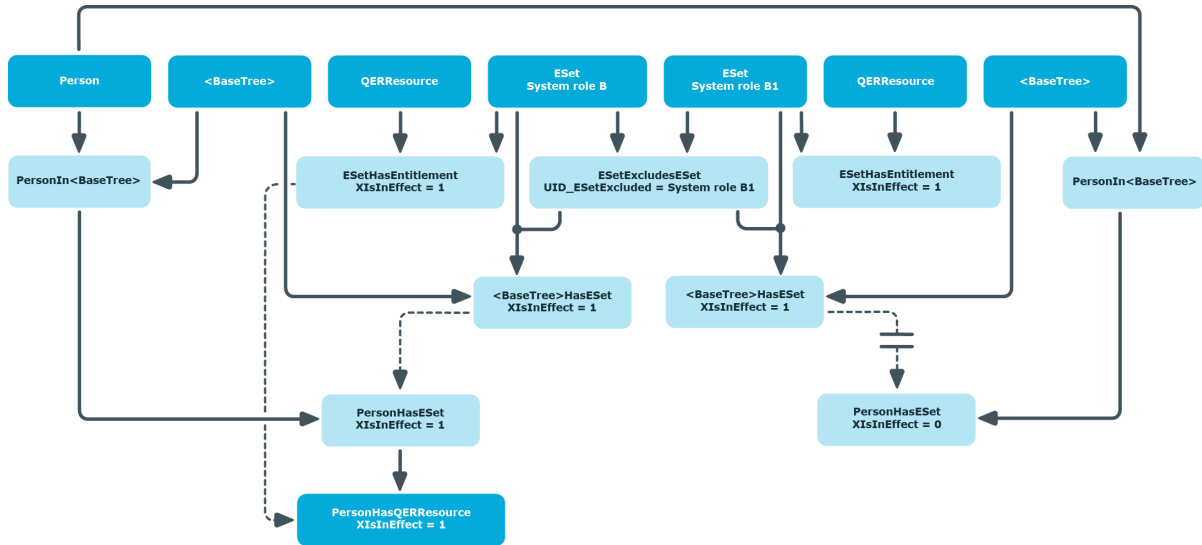
If this configuration parameter is set, system roles that are assigned to hierarchical roles are not split in the calculation of inheritance. This means that the assignments of company resources to hierarchical roles are not written to the corresponding assignment tables (<BaseTree>Has...). The system roles whose assignments are in effect (PersonHasESet.XIsInEffect = 1) are not split until the calculation of user inheritance.

This configuration parameter is activated by default.

**Figure 7: Inheritance by indirectly assigned system roles when the configuration parameter is activated**

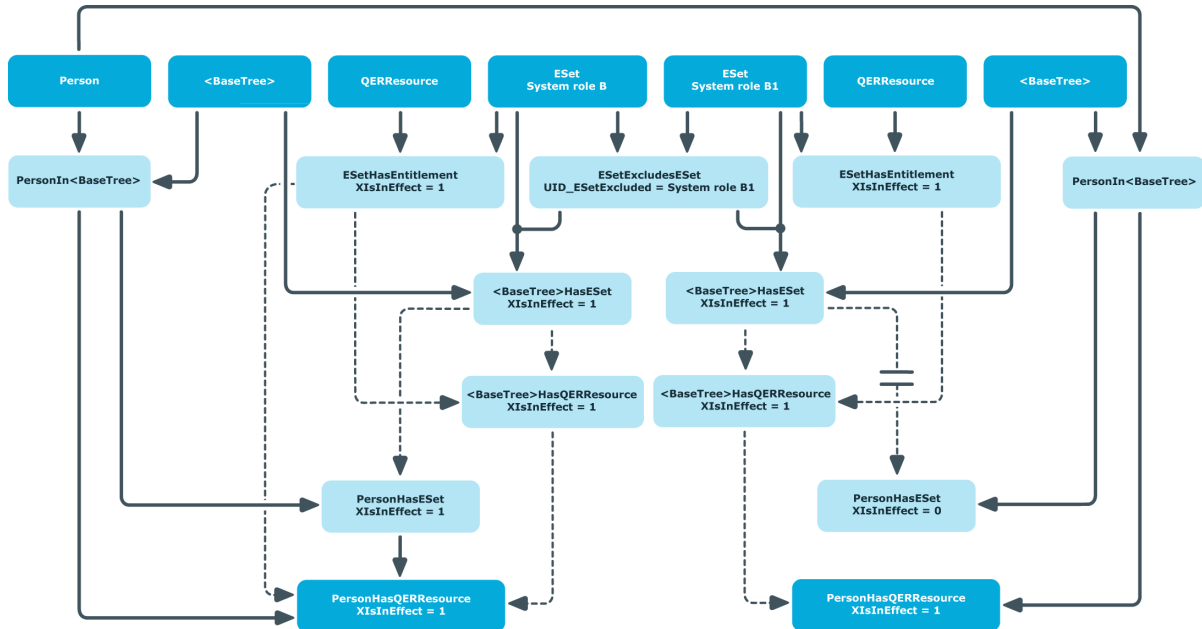


**Figure 8: Inheritance by different hierarchical roles when the configuration parameter is activated**



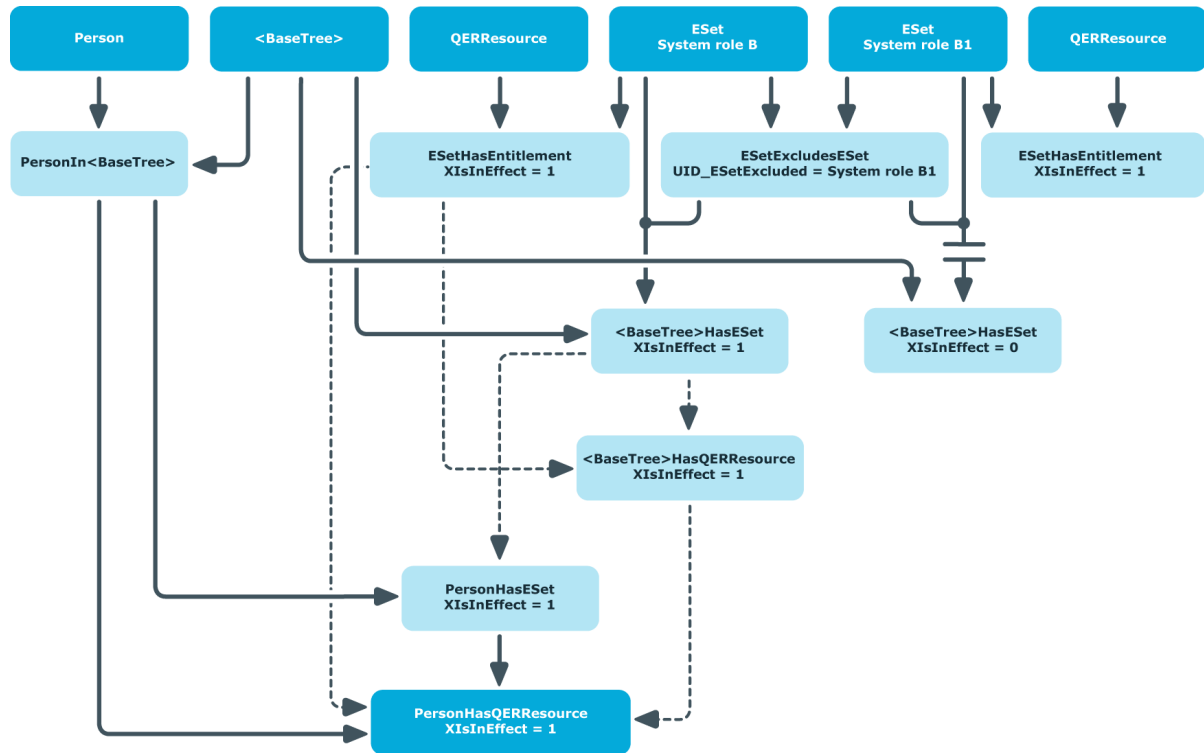
If the configuration parameter is not activated, the system roles whose assignments are in effect (BaseTreeHasESet.XIIsIneffect = 1) are split in the inheritance calculation for the hierarchical roles. If the excluding system roles are assigned to different hierarchical roles, both assignments are effective. This makes the resulting company resource assignments to hierarchical roles also effective. If an employee is a member of both hierarchical roles, the company resources of the excluded system role are inherited by this employee.

**Figure 9: Inheritance by different hierarchical roles when the configuration parameter is deactivated**



If the mutually exclusive system roles are assigned to the same hierarchical role, the exclusion definition takes effect when calculating BaseTreeHasESet.

**Figure 10: Inheritance through the same hierarchical role when the configuration parameter is deactivated**



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- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product



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