

HP OpenView Select Identity

**Connector for Novell® eDirectory™
Version 8.7.3**

Installation and Configuration Guide

**Connector Version: 3.4
Select Identity Version: 3.3.1**



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- Element Construction Set (ecs).
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- Jakarta-regexp.
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Installing the Connector

The eDirectory connector enables HP OpenView Select Identity to perform tasks on Novell eDirectory servers. The following tasks are supported by the eDirectory connector:

- Add, update, and remove users
- Retrieve user attributes
- Enable and disable users
- Verify a user's existence
- Change user passwords
- Reset user passwords
- Retrieve all entitlements
- Retrieve a list of supported user attributes
- Assign and unassign entitlements to and from users, including the addition of users to multiple OUs

The eDirectory connector is a one-way connector and pushes changes made to user data in the Select Identity database to a target eDirectory server. The mapping file controls how Select Identity fields are mapped to LDAP fields.



This connector is supported on non-US platforms. This connector relies on the JNDI (LDAP's resource provider interface) to exchange data with LDAP.

The eDirectory connector is packaged in the following files:

- `TALDAPv3.rar` – contains the connector binary files
- `schema.jar` – contains the attribute mapping file (`edir.xml`) for this system, which control how Select Identity fields are mapped to eDirectory LDAP fields

These files are located in the Novell E-Directory directory on the Select Identity Connector CD.

System Requirements

The eDirectory connector is supported on the following Select Identity server configuration:

Select Identity Version	Application Server	Database
3.0.2	WebLogic 8.1.2 on Windows 2003	SQL Server 2000
	WebLogic 8.1.2 on HP-UX 11i	Oracle 9i
	WebSphere 5.1.1 on Solaris 9	DB2 8.2 (or DB2 8.1 Service Pack 7)
3.3	WebLogic 8.1.4 on Windows 2003	SQL Server 2000
3.3.1	WebLogic 8.1.4 on Windows 2003	SQL Server 2000
	WebSphere 5.1.1 on HP-UX 11i	Oracle 9i

The connector is supported with eDirectory 8.7.3 on Windows 2000, Windows 2003, and Solaris 9.

The eDirectory connector is internationalized and able to operate with languages that are supported by the Java Unicode specification. If you wish to

use the connector on non-English platforms, make sure that the following prerequisites are met:

- The Select Identity server should be configured for internationalization. Refer to the *HP OpenView Select Identity Installation and Configuration Guide* for more information.
- The resource should be configured to support local language characters.

See [Internationalization Support on page 12](#) for more information.

Deploying on the Web Application Server

To install the eDirectory connector on the Select Identity server, complete these steps:

- 1 Create a subdirectory in the Select Identity home directory where the connector's RAR file will reside. For example, you could create the `C:\Select_Identity\connectors` folder on Windows. (A connector subdirectory may already exist.)
- 2 Copy the `TALDAPv3.rar` file from the Select Identity Connector CD to the connector subdirectory.
- 3 If deploying the connector on WebLogic, complete the following steps. If deploying on WebSphere, skip to [Step 4 on page 10](#).
 - a Create a schema subdirectory in the Select Identity home directory where the connector's mapping file(s) will reside. For example, you could create the `C:\Select_Identity\schema` folder. (This subdirectory may already exist.)
 - b Extract the contents of the `schema.jar` file (on the Select Identity Connector CD) to the schema subdirectory.
 - c Ensure that the `CLASSPATH` environment variable in the WebLogic server startup script references the schema subdirectory.
 - d Start the application server if it is not currently running.
 - e Log on to the WebLogic Server Console.
 - f Navigate to *My_domain* → **Deployments** → **Connector Modules**.
 - g Click **Deploy a New Connector Module**.

- h** Locate and select the `TALDAPv3.rar` file from the list. It is stored in the connector subdirectory.
 - i** Click **Target Module**.
 - j** Select the **My Server** (your server instance) check box.
 - k** Click **Continue**. Review your settings.
 - l** Keep all default settings and click **Deploy**. The Status of Last Action column should display **Success**.
- 4** If deploying the connector on WebSphere, complete the following steps:
- a** Stop the application server.
 - b** Extract the contents of the `schema.jar` file (on the Select Identity Connector CD) to the `WebSphere\AppServer\lib\ext` directory.
 - c** Start the application server.
 - d** Log on to the WebSphere Application Server Console.
 - e** Navigate to **Resources** → **Resource Adapters**.
 - f** Click **Install RAR**.
 - g** In the Server path field, enter the path to the `TALDAPv3.rar` file. It is stored in the subdirectory created in [Step 1](#).
 - h** Click **Next**.
 - i** In the Name field, enter a name for the connector.
 - j** Click **OK**.
 - k** Click the **Save** link (at the top of the page).
 - l** On the Save to Master Configuraton dialog, click the **Save** button.
 - m** Click **Resources** → **Resource Adapters**.
 - n** Click the new connector.
 - o** Click **J2C Connection Factories** in the Additional Properties table.
 - p** Click **New**.
 - q** In the Name field, enter the name of the factory for the connector. For the SQL connector, enter `eis/LDAPv3`.
 - r** Click **OK**.
 - s** Click the **Save** link.
-

- t** On the Save to Master Configuraton dialog, click the **Save** button.
 - u** Restart WebSphere.
- 5** Modify the mapping file, if necessary. This file is described in detail in [Understanding the Mapping File on page 20](#).

After installing the connector, see [Installing the Connector on page 7](#) about registering and configuring the connector in Select Identity.

Configuring the Connector

After you deploy the connector on the application server, you must configure Select Identity to use the connector by deploying it in the Select Identity client. The following provides an overview of the procedures you must complete in order to deploy your connector. It also provides connector-specific information you must provide when configuring Select Identity to use the connector.

Internationalization Support

If you installed the connector on non-English platforms, familiarize yourself with the information in this section before deploying and configuring the connector. Internationalization support provided by the connector includes the following capabilities and limitations:

- When entering user attributes to provision (in the Select Identity client), you can enter local language characters except for the following attributes:
 - UserName
 - Password
 - Email

The following shows Chinese characters used in attribute values:

用户属性	
FirstName	中文
UserName	OraEvf003
Password	***** [No expiration]
GUID	E19A27C5-C66E-4F60-11DD-363488491677
Email	yilei.zhang@hp.com
Business Phone	null
Home Phone	null
Address 1	地址1
Country	中国ABC
Gen_Ora_118N_KEY	OraEvf003

- Reverse synchronization of local language characters is supported. When provisioning users on the LDAP resource, you can enter local language characters as input data. These characters are reconciled with Select Identity through SPML communication. However, the following user attributes must contain English characters:
 - UserName
 - Password
 - Email
- The attribute names on the resource cannot contain non-English characters. Thus, you cannot include non-English characters in the mapping file. The following shows attributes contained in a mapping file; only English attribute names are shown.

Resource Name=Gen_Ora_118N				
<< < 页 1 / 1 > >>				总记录数: 10
Name	Min Length	Max Length	Attribute Mapped To	Authoritative
Address	0	255	Addr1	N
Country	0	255	Country	N
E-Mail	0	255	Email	N
FirstName	0	255	FirstName	N
Gen_Ora_118N_ENTITLEMENTS	1	255	Gen_Ora_118N_ENTITLEMENTS	Y
Gen_Ora_118N_KEY	1	255	Gen_Ora_118N_KEY	Y
Password	0	255	Password	N
PhOffice	0	255	PhBus	N
UserName	0	255	UserName	N
phHome	0	255	PhHome	N

- Non-English entitlements are not supported by the connector.

- All configuration and property file names must be in English.
- The exception messages from the resource are in English only.
- The log messages are in English only.
- The Select Identity resource name, which is included in the reverse synchronization configuration of the agent, must be in English.

Connector Deployment

Complete the following steps to deploy and configure the connector:

- 1 Before deploying the connector in Select Identity, connect to LDAP using an LDAP browser or another utility. This will help ensure that the LDAP resource is available and the correct parameters are known before deploying the resource in Select Identity.
- 2 Register the connector with Select Identity by clicking the **Deploy New Connector** button on the Connectors home page. Complete this procedure as described in the “Connectors” chapter of the *HP OpenView Select Identity Administrator Guide*.

After you deploy the connector, the connector properties will look similar to this:

[Home](#) > [Connectors](#) : LDAPConnector

Connector Information	
* Connector Name:	LDAPConnector
* Pool Name:	eis/LDAPv3

- 3 Deploy a resource that uses the newly created connector. On the Resources home page, click the **Deploy New Resource** button. When configuring the resource, refer to the following table for parameters specific to this connector:

Field Name	Sample Values	Description
Resource Name	eDir	Name of the target resource.
Resource Type	EDIR	The connector that was deployed in Step 2 on page 14 .

Field Name	Sample Values	Description
Authoritative Source	No	Whether this resource is a system that is considered to be the authoritative source for user data in your environment. You must specify No because the connector cannot synchronize account data with the Select Identity server.
Associate to Group	Selected	Whether the system uses the concept of groups. For this LDAP connector, select this option.
Access URL	ldap://tlnt1:389	URL to access the resource.
Suffix	dc=qa, dc=hp, dc=com	The domain(s) to which the users will be provisioned.
Login Name	cn=Administrator, cn=Users, dc=qa, dc=hp, dc=com	Login account with administrative privileges to add and delete users. This is required to log in to the resource.
Password	Password123	Password corresponding to the login account.
User Suffix	o=std	Suffix of user's distinguished name. This is the location in the tree where the users will be provisioned.
User Object Class	top, Person, organizationalPerson, user	Object class for the users.
Group Suffix	o=std	Suffix part of group's distinguished name. This is the location in the tree where the user groups will be provisioned.

Field Name	Sample Values	Description
Group Object Class	Top, group	Object class of user groups.
Mapping File	edir.xml	Location of the connector mapping file, which is used to map resource attributes to Select Identity attributes.

Complete the steps in this procedure as described in the “Resources” chapter of the *HP OpenView Select Identity Administrator Guide*.

After you deploy the resource for the connector, the Basic Info page of the resource properties will look similar to this:

Resource Information	
* Resource Name:	EDIR
Resource Description:	<div style="border: 1px solid gray; height: 40px; width: 100%;"></div>
* Resource Type:	LDAPConnector
* Authoritative Source:	Yes
* Delete User:	Yes
Reconciliation Workflow:	ReconciliationDefaultProcess
Resource Owner:	sis
* Resource Id:	2239

The Additional Info page will look similar to this:

Resource Information	
Resource Name:	EDIR
<input checked="" type="checkbox"/> Manage User	
Associate to Group:	<input checked="" type="checkbox"/>

The Access Info page will look similar to this:

Resource Access Information	
* Resource Name:	EDIR
Access URL:	ldap://tnt1:389
Suffix:	dc=com,dc=hp,dc=india
Login Name:	cn=admin,dc=com,dc=hp,dc=india
Password:	*****
* User Suffix:	o=stsd
* User Object Class:	Top,ndsLoginProperties,Person,organizationalPerson,inetOrgPerson
* Group Suffix:	o=stsd
* Group Object Class:	Top,groupOfNames
* Mapping File:	edir.xml

- 4 Create the IsEnabled attribute. This attribute is used internally by the connector to enable or disable the user in the eDirectory LDAP user store. After a user is disabled, he or she will not be able to log in to eDirectory.

Create other attributes that link Select Identity to the connector. For each mapping in the connector's mapping file, create an attribute using the Attributes capability on the Select Identity client. Refer to the "Attributes" chapter in the *HP OpenView Select Identity Administrator*

Guide for more information. After you create the attributes for the connector, the View Attributes page for the resource will look similar to this:

(Resource Name=EDIR7)				
<< < Page <input type="text" value="1"/> of 1 > >>				Total Records:41
Name	Min Length	Max Length	Attribute Mapped To	Authoritative
Address 1	1	128	Addr1	N
Address 2	1	128	Addr2	N
City	1	128	City	N
Company	1	128	Company	N
CostCenter	1	128	CostCenter	N
CostCenterDescription	1	128	CostCenterDescription	N
Country	1	128	Country	N
DepartmentNumber	1	128	Department	N
Description	1	128	Description	N
EDIR7_ENTITLEMENTS	1	255	EDIR7_ENTITLEMENTS	Y
EDIR7_KEY	1	255	EDIR7_KEY	Y
Email	1	128	Email	N
Employee ID	1	128	Employee ID	N
EmployeeStatus	1	128	EmployeeStatus	N
EmployeeType	1	128	EmployeeType	N
FirstName	1	128	FirstName	N
HomePostalAddress	1	128	HomePostalAddress	N
instantMessagingID	1	128	instantMessagingID	N
Language	1	128	Language	N
LastName	1	128	LastName	N
LoginDisabled	1	128	LoginDisabled	N
Password	1	128	Password	N
PhBus	1	50	PhBus	N
PhHome	1	128	PhHome	N
State	1	128	State	N
Title	1	50	Title	N
UserName	1	128	UserName	N
Zip	1	50	Zip	N

- 5 Create a Service that will use the newly created resource. To do so, click the **Deploy New Service** button on the Services home page. Complete this procedure as described in “Services” of the *HP OpenView Select Identity Administrator Guide*. You will reference your new resource created in [Step 3](#) while creating this service.

Note the following when creating Service views for the eDirectory connector:

- Do not add the `IsEnabled` attribute to any Service view; it is for internal use by the connector.
- Do not add the password attribute as part of the Service view; it is used for user modification only.

Understanding the Mapping File

The eDirectory connector provides the `edir.xml` mapping file. This file was created in XML, according to SPML standards, and it is bundled in the `schema.jar` file. The `edir.xml` file contains the attributes required by the resource application. It maps user account additions and modifications from Select Identity to eDirectory. When you deploy a resource using the Select Identity Resources pages, you can review this file.

You can create attributes that are specific to Select Identity using the Attributes page in the Select Identity client. These attributes can be used to associate Select Identity user accounts with system resources by editing the connector mapping file described in this chapter. This process becomes necessary because, for example, a single attribute “username” can have a different name on different resources, such as “login” for UNIX, “UID” for a database, and “userID” on a Windows server.

This file does not need to be edited unless you want to map additional attributes to your resource. If attributes and values are not defined in this mapping file, they cannot be saved to the resource through Select Identity.

General Information

The following operations can be performed in the mapping file:

- Add a new attribute mapping
- Delete an existing attribute mapping
- Modify attribute mappings

Here is an explanation of the elements in the XML mapping files provided by the eDirectory connector:

- **<Schema>**, **<providerID>**, and **<schemaID>**

Provides standard elements for header information.

- **<objectClassDefinition>**

Defines the actions that can be performed on the specified object as defined by that name attribute (in the **<properties>** element block) and the Select Identity-to-resource field mappings for the object (in the **<memberAttributes>** block). For example, the object class definition for users defines that users can be created, read, updated, deleted, reset, and expired in LDAP.

- **<properties>**

Defines the operations that are supported on the object. This can be used to control the operations that are performed through Select Identity. The following operations can be controlled:

- Create (CREATE)
- Read (READ)
- Update (UPDATE)
- Delete (DELETE)
- Enable (ENABLE)
- Disable (DISABLE)
- Reset password (RESET_PASSWORD)
- Expire password (EXPIRE_PASSWORD)
- Change password (CHANGE_PASSWORD)

The operation is assigned as the name of the <attr> element and access to the operation is assigned to a corresponding <value> element. You can set the values as follows:

- true — the operation is supported by the connector
- false — the operation is not supported by the connector and will throw `PermissionException`
- bypass — the operation is not supported by the connector but will not throw any exception; the operation is simply bypassed

Here is an example:

```
<objectClassDefinition name="User" description="EDIR User">
  <properties>
    <attr name="CREATE">
      <value>true</value>
    </attr>
    <attr name="READ">
      <value>true</value>
    </attr>
```

- **<memberAttributes>**

Defines the attribute mappings. This element contains <attributeDefinitionReference> elements that describe the mapping for each attribute. Each <attributeDefinitionReference> must be followed by an <attributeDefinition> element that specifies details such as minimum length, maximum length, and so on.

Each <attributeDefinitionReference> element contains the following attributes:

- Name — the name of the reference.
- Required— if this attribute is required in the provisioning (set to true or false).
- concero:tafield — the name of the Select Identity resource attribute. In general, the attribute assigned to tafield should be the same as the physical resource attribute, or at least the connector attribute. For example, it is recommended to have the following:

```
<attributeDefinitionReference name="FirstName"
  required="false" concero:tafield="[givenname]"
  concero:resfield="givenname" concero:init="true"
  concero:isMulti="true"/>
```

instead of this:

```
<attributeDefinitionReference name="FirstName"
required="false" concero:tafield="[FirstName]"
concero:resfield="givenname" concero:init="true"
concero:isMulti="true"/>
```

- **concero:resfield** — the name of the physical resource attribute from the resource schema. If the resource does not support an explicit schema (such as UNIX), this can be a tag field that indicates a resource attribute mapping.

Also, the attribute name may be case-sensitive; for example, if the attribute is defined in all uppercase letters on the resource, be sure to specify it in all uppercase letters here.

- **concero:isKey** — An optional attribute that, when set to true, specifies that this is the key field to identify the object on the resource. Only one `<attributeDefinitionReference>` can be specified where `isKey="true"`. This key field does not need to be the same as the key field of the identity object in Select Identity.

Note that for a key field mapping where `isKey="true"` and `tafield` is not assigned the `UserName` attribute, `UserName` should not be used in any other mapping. That is, `UserName` can be assigned to `tafield` only in cases where it is mapped to the key field in the resource. Example:

```
<attributeDefinitionReference name="UserName"
required="true" concero:tafield="[UserName]"
concero:resfield="uid" concero:isKey="true"
concero:init="true"/>
```

- **concero:init** — An optional attribute that identifies that the attribute is initialized with the value of the attribute passed in from Select Identity.

Here is an example:

```
<memberAttributes>
<attributeDefinitionReference name="User Name"
required="true" concero:tafield="[User Name]"
concero:resfield="cn" concero:isKey="true"
concero:init="true" />
```

The interpretation of the mapping between the connector field (as specified by the `concero:tafield` attribute) and the resource field (as specified by the `concero:resfield` attribute) is determined by the connector. The eDirectory connector has code to interpret the mappings in one way, as follows:

- The connector attribute names are specified in square braces, like this: `[xyz]`. The value of attribute `xyz` is taken from the UserModel during provisioning.
- Composite attributes can be specified in the `edir.xml` mapping file. To do this, specify `[attr1] xxxx [attr2]` as the connector attribute. This specifies that the value of the `attr1` and `attr2` attributes should be combined with the string `xxxx` to form a mapping for the specified resource field. The eDirectory connector has code to handle these composite mappings.

- **<attributeDefinition>**

Defines the properties of each object's attribute. For example, the attribute definition for the HomeDir attribute defines that it must be between zero and 100 characters in length and can contain the following letters, numbers, and characters: a-z, A-Z, 0-9, @, +, and a space.

Here is an excerpt from the `ActiveDir.xml` file:

```
<attributeDefinition name="HomeDir" description="User Home
directory" type="xsd:string" >
  <properties>
    <attr name="minLength">
      <value>0</value>
    </attr>
    <attr name="maxLength">
      <value>128</value>
    </attr>
    <attr name="pattern">
      <value><![CDATA[[a-zA-Z0-9@+]]> </value>
    </attr>
  </properties>
</attributeDefinition>
```

- **<concero:entitlementMappingDefinition>**

Defines how entitlements are mapped to users.

- **<concero:objectStatus>**

Defines how to assign status to a user.

- **<concerno:relationshipDefinition>**
Defines how to create relationships between users.

eDirectory Mapping Information

The following are the attribute mappings supported for eDirectory. These are listed in the `edir.xml` mapping file. You can add, modify, or delete attributes once you are familiar with the contents of this file. You can edit the Select Identity resource attributes; they reflect the identity information as seen in Select Identity. The physical resource attributes are literal attributes of user accounts in eDirectory. These attributes cannot be changed.

Select Identity Resource Attribute	eDirectory Attribute	Description
UserName	uid	Key on the resource
Password	userpassword	User's password
Email	mail	Mail ID
FirstName	givenname	First name
LastName	sn	Last name
[FirstName] [LastName]	cn	Common name
Employee ID	employeenumber	Employee ID
PhBus	telephoneNumber	Business phone
Address 1	postalAddress	Postal address
Address 2	roomNumber	Room number
City	l	City
State	st	State
Zip	postalCode	Zip code
Title	title	Title
Company	company	Company

Select Identity Resource Attribute	eDirectory Attribute	Description
CostCenter	costCenter	Cost center
CostCenterDescription	costCenterDescription	Cost center description
DepartmentNumber	departmentNumber	Department number
Description	description	Description
EmployeeStatus	employeeStatus	Employee status
EmployeeType	employeeType	Employee type
PhHome	homePhone	Home phone
HomePostalAddress	homePostalAddress	Home postal address
instantMessagingID	instantMessagingID	Instant messaging ID
Language	Language	Language
Country	co	Country
LoginDisabled	loginDisabled	Login disable field

Uninstalling the Connector

If you need to uninstall a connector from Select Identity, make sure that the following are performed:

- All resource dependencies are removed.
- The connector is deleted using the Connectors pages on the Select Identity client.

On WebLogic

Perform the following to delete a connector:

- 1 Log on to the WebLogic Server Console.
- 2 Navigate to *My_Domain* → **Deployments** → **Connector Modules**.
- 3 Click the delete icon next to the connector that you want to uninstall.
- 4 Click **Yes** to confirm the deletion.
- 5 Click **Continue**.

On WebSphere

Complete the following steps to uninstall the connector on WebSphere:

- 1 Log on to the WebSphere Application Server Console.
- 2 Navigate to **Resources** → **Resource Adapters**.
- 3 Select the connector to uninstall.
- 4 Click **Delete**.
- 5 Click the **Save** link (at the top of the page).
- 6 On the Save to Master Configuraton dialog, click the **Save** button.