

# **HP OpenView Select Identity**

## **Connector for the Tandem Himalaya with Safeguard, Versions G6.18 and G6.22**

### **Installation and Configuration Guide**

**Connector Version: 1.4  
Select Identity Version: 3.3.1**



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- Commons-beanutils.
- Commons-collections.
- Commons-logging.
- Commons-digester.
- Commons-httpclient.

- Element Construction Set (ecs).
- Jakarta-poi.
- Jakarta-regexp.
- Logging Services (log4j).

Additional third party software used by Select Identity includes:

- JasperReports developed by SourceForge.
- iText (for JasperReports) developed by SourceForge.
- BeanShell.
- Xalan from the Apache XML Project.
- Xerces from the Apache XML Project.
- Java API for XML Processing from the Apache XML Project.
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# Installing the Connector

The Tandem Himalaya with Safeguard connector — hereafter referred to as the Tandem connector — enables HP OpenView Select Identity to perform the following tasks in Tandem Himalaya servers:

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

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



The Tandem Himalaya server must run the Telnet service, which the connector uses to connect with the Tandem server and provision users.

The Tandem connector is packaged in the following files:

- `TandemConnector.rar` — Contains the binaries
- `tandemschema.jar` — Contains the mapping file
- `tandem-expect-scripts.zip` — Contains a set of scripts that perform user provisioning operations for the connector on Windows
- `tandem-expect-scripts.tar.gz` — Contains the scripts that perform user provisioning operations on UNIX

These files are located in the `Tandem` directory on the Select Identity Connector CD.

## System Requirements

The Tandem connector is supported in the following environment:

Select Identity Version	Application Server	Database
3.0.2	WebLogic 8.1.2 on Windows 2003	SQL Server 2000
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

This connector is supported on Tandem Himalaya servers, versions G6.18 and G6.22.



## Deploying on the Web Application Server

To install the Tandem connector on the Select Identity server, complete the steps in this section:

- 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 `TandemConnector.rar` file from the Select Identity Connector CD to the connector subdirectory.
- 3 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\schemas` folder. (This subdirectory may already exist.)
- 4 Extract the contents of the `tandemschema.jar` file (on the Select Identity Connector CD) to the schema subdirectory.
- 5 Ensure that the CLASSPATH environment variable in the WebLogic server startup script references the schema subdirectory.
- 6 Start the application server if it is not currently running.
- 7 Log on to the WebLogic Server Console.
- 8 Navigate to *My\_domain* → **Deployments** → **Connector Modules**.
- 9 Click **Deploy a New Connector Module**.
- 10 Locate and select the `TandemConnector.rar` file from the list. It is stored in the connector subdirectory.
- 11 Click **Target Module**.
- 12 Select the **My Server** (your server instance) check box.
- 13 Click **Continue**. Review your settings.
- 14 Keep all default settings and click **Deploy**. The Status of Last Action column should display Success.
- 15 Modify the mapping files, if necessary. See [Understanding the Mapping File on page 11](#) for details.

After installing the connector, see [Configuring the Connector on page 21](#) about registering and configuring the connector in Select Identity.

# Installing Expect and the Connector Scripts

The Tandem connector provides a set of scripts that perform user provisioning operations for the connector. They are run using a tool called Expect. Install Expect and the scripts on the system where the application server and Select Identity server are installed by completing the following steps:

- 1 If necessary, download Expect and install it, as follows:

*On UNIX*

If necessary, download Expect from <http://sunfreeware.com/> and install it on the UNIX server. (Note that GCC and TCL/TK are prerequisites of Expect on Solaris.) When creating the Tandem resource (using the Select Identity client), you will provide the location of the Expect executable on the Access Info page.

*On Windows*

Download Expect from <http://expect.nist.gov/> and install it on the local disk. When creating the Tandem resource (using the Select Identity client), you will provide the location of the Expect executable on the Access Info page.

- 2 Install the scripts, as follows:

*On UNIX*

Create a directory called `tandem` in the Select Identity home directory and extract the `tandem-expect-scripts.tar.gz` file using the following commands:

```
gzip -d tandem-expect-scripts.tar.gz
tar xvf tandem-expect-scripts.tar
```

When deploying the Tandem resource, you will provide the location of this directory.

*On Windows*

Extract the `tandem-expect-scripts.zip` file from the Select Identity Connector CD to a local directory on the application server, such as `C:\Select_Identity\tandem`. When deploying the Tandem resource, you will provide the location of this directory.

## Understanding the Mapping File

The Tandem connector is deployed with the `TandemSchemaMapping.xml` mapping file, which describes the attributes required by the system. The file is created in XML, according to SPML standards, and is bundled in a JAR file called `tandemschema.jar`. The mapping file is used to map user account additions and modifications from Select Identity to the system resource. When you deploy a resource using the Resources page of the Select Identity client, 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 “owner” can have a different name on different resources, such as “OWNER” for Tandem, “UID” for a database, and “ownerID” 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 file:

- **<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 UNIX.

- **<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
- bypass — the operation is not supported by the connector

Here is an example:

```
<objectClassDefinition name="User" description="Tandem
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— whether this attribute is required in the provisioning (set to true or false).
- Concerro: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, 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="Tandem-UName"
    required="true" concero:tafield="User Name"
    concero:resfield="username" concero:init="true" />
  ...
</memberAttributes>
```

- **<attributeDefinition>**

Defines the properties of each object's attribute. For example, the attribute definition for the Directory attribute defines that it must be between one and 50 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 `TandemSchemaMapping.xml` file:

```
<attributeDefinition name="GroupName" description="GroupName"
  type="xsd:string">
  <properties>
    <attr name="minLength">
      <value>1</value>
    </attr>
    <attr name="maxLength">
      <value>8</value>
    </attr>
    <attr name="pattern">
      <value>
        <![CDATA[ [a-zA-Z0-9@+ ] ]>
      </value>
    </attr>
  </properties>
</attributeDefinition>
```

- **<concerno:entitlementMappingDefinition>**

Defines how entitlements are mapped to users.

- **<concerno:objectStatus>**

Defines how to assign status to a user.

- **<concerno:relationshipDefinition>**

Defines how to create relationships between users.

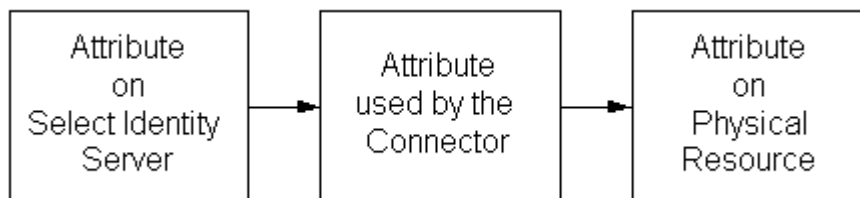
## Tandem Mapping Information

The following is a description of the columns provided in the tables below:

- **Select Identity Resource Attribute** — The name of the attribute on the Select Identity server.
- **Connector Attribute**— The attribute used by the Tandem connector.

- **Actual Attribute on Tandem Server** — The name of the attribute on the Tandem server, to which the Select Identity and logical resource attributes are mapped. These attributes cannot be changed.
- **Description** — A description of the attribute and any noteworthy information needed when assigning values to the attribute.

Here is an illustration of how the attributes are related:



## Resource Attribute Mappings

The following table describes the mappings in the `TandemSchemaMapping.xml` 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 on the Tandem server. These attributes cannot be changed.

Also, some connector attributes must be mapped in a different way than normal attributes to leverage advanced Select Identity functionality. See the Description column for more information.

- ▶ When adding a user in Select Identity, do not specify an entitlement (secondary group) value that is the same as that of the Default Group on the system resource. This may cause an entitlement to be removed from the user if the user's Default Group value is changed.



<b>Select Identity Resource Attribute</b>	<b>Attribute on Connector</b>	<b>Attribute on Physical Resource</b>	<b>Description</b>
User Name	username	(this is a user attribute)	The user name. Specify a value from 1-8 alphanumeric characters in length.
Password	password	(this is a user attribute)	The user's password. Specify 1-8 alphanumeric characters. This value is encrypted.
Primary Group	groupname	(this is a user attribute)	The connector can dynamically retrieve primary groups from the Tandem server when a user is added. To enable this feature, see the <i>HP OpenView Select Identity Administrator Guide</i> for details about creating this attribute.
User ID	uid	(this is a user attribute)	The Tandem user ID of this user. Specify a value 1-3 alphanumeric characters in length.
Group ID	gid	(this is a user attribute)	The ID of the group to which this user belongs. Specify a value 1-3 alphanumeric characters in length.

<b>Select Identity Resource Attribute</b>	<b>Attribute on Connector</b>	<b>Attribute on Physical Resource</b>	<b>Description</b>
[Primary Group].[User Name]	fullusername	(this is a user attribute)	The full user name. This attribute is created internally in Select Identity.
[Group ID],[User ID]	fulluserid	(this is a user attribute)	The full user ID. This attribute is created internally in Select Identity.
Owner	owner	OWNER	The owner of the user record. The value must be 1-17 alphanumeric characters in length.
Password Expires	passwordExpires	PASSWORD-EXPIRES	The user expiration date. The format is: {month-name day} year [, hour: min].
Password Change	passwordchange	PASSWORD-MUST-CHANGE	The maximum number of days after which the user must change the password. Specify an integer in the range of 1-32,767.
Password Grace	passwordgrace	PASSWORD-EXPIRY-GRACE	Number of days after the password expires in which the users can change the password. Specify an integer in the range of 0-32,767.

<b>Select Identity Resource Attribute</b>	<b>Attribute on Connector</b>	<b>Attribute on Physical Resource</b>	<b>Description</b>
Default Protection	defaultprotection	DEFAULT-PROTECTION	Default protection attributes for the user. Specify a valid Tandem protection string.
Initial File	initialfile	INITIAL-PROGRAM	The initial program for the user. Specify the file name, up to 256 alphanumeric characters in length.
Initial Directory	initialdir	INITIAL-DIRECTORY	Initial working directory for the user. Specify a valid Tandem pathname (up to 255 characters).
Initial Program Type	initialprogtype	INITIAL-PROGTYPE	Initial program type for the user in the OSS environment. Valid entries are PROGRAM, SERVICE, and WINDOW.

## Function Mappings

The following table provides function mappings between the Select Identity server and Tandem server. These attributes are created when the connector is installed; the mapping is not contained in the mapping file.

<b>Select Identity Resource Attribute</b>	<b>Attribute on Physical Resource</b>	<b>Description</b>
Enable User	THAW USER	Enables the user to log on to the Tandem machine.
Disable User	FREEZE USER	Disables the user from accessing the Tandem machine.

# 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.

- 1 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 : **TandemConnector**

Connector Information	
*Connector Name:	TandemConnector
*Pool Name:	eis/TandemConnector

- 2 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	SNVT-tandem	Name given to the resource.
Resource Type	Tandem	The connector that was deployed in <a href="#">Step 1 on page 21</a> .
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 <b>No</b> 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 connector, select this option.
Host Name	server.company.com	IP address or hostname of the Tandem server.
Super User Group	trulogica	The group to which the Super User belongs.
Super User Name	user	User name of the user who has Administrative privileges on the Tandem machine. Specify only the user name (without the group name).
Super User Password	Password123	Password for the Super User account.
Expect Executable	/Expect/bin/expect.exe	Path to the Expect executable, which is required to run scripts.

Field Name	Sample Values	Description
Script Location	/Select_Identity/ TandemConnector/scripts	Location of the Expect scripts that were extracted from the Tandem-expect-scripts.zip file during installation.
Safecom Path	\$\$SYSTEM.ASUTILS. SAFECOM	The path to the Safecom executable on the Tandem server.
Mapping File	TandemSchema-Mapping.xml	Location of the connector mapping file used to map Select Identity attributes to attributes on the logical resource.
Resource Name	SNVT-tandem	Name given to the resource.

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 Tandem connector, the Basic Info page of the resource properties will look similar to this:

Resource Information	
* Resource Name:	Tandem
Resource Description:	<input type="text"/>
* Resource Type:	TandemConnector
* Authoritative Source:	No
* Delete User:	Yes
Reconciliation Workflow:	
Resource Owner:	
* Resource Id:	1003

The Additional Info page will look similar to this:

Resource Information	
Resource Name:	Tandem
<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:	Tandem
* Host Name:	snvt.btp.cpqcorp.net
* Super User Group:	trulogic
* Super User Name:	user
* Super User Password:	*****
* Expect Executable:	C:/Expect/bin/expect.exe
* Script Location:	C:\si302\TandemConnector\scripts
* Safecom Path:	\$SYSTEM.ASUTILS.SAFECOM
* Mapping File:	TandemSchemaMapping.xml

- 3 Create 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.

For Tandem attributes that cannot be mapped to existing Select Identity attributes, you must create new attributes in Select Identity and map them to the corresponding Tandem attributes.

The Tandem connector can dynamically retrieve the list of primary groups from the Tandem resource. To enable this, create a Primary Group attribute with the following settings:

Attribute Name	Primary Group
Resource Name	SNVT-tandem
Identity Object Type	User
Primitive Type	String
Attribute Type	Normal
Storage Type	Normal
Multi Value	No
Min Length	1
Max Length	50
Required	Yes
Default Display Name	Primary Group



Attribute Name	Primary Group
Default Display Mask	0
Default Display Length	0
Value Constraint Type	Dynamic
Value Constraint Function	Search Connector
Value Generation Function	
Value Validation Function	

- 4 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 2](#) while creating this service.

The following attributes need special consideration when creating Services that rely on a Tandem resource:

- Service View Creation  
When creating a Service that relies on a Tandem resource, the Group ID attribute should not be included in the Service view. This attribute is internally updated by the Tandem connector.

- Add User to Service  
When adding a user to a Service that relies on a Tandem resource, the following attributes are mandatory and must be selected as Required:

- UserName
- Password
- Primary Group

The UserID attribute is optional, and if empty, the connector creates a new user ID for that user from the Tandem server. All other attributes are optional, and if empty, they will not be set on the Tandem server.

- Modify User of a Service  
When modifying a user associated with a Service that relies on Tandem, the following attributes should not be made available for update. These attributes are fixed for a user once created:
- UserName

- Password
- UserID
- Primary Group

## Understanding the Installed Scripts

The Tandem connector performs operations using a tool called Expect. This tool must be installed on the application server running Select Identity.

The following scripts are provided during the connector installation. The syntax for each script is provided to enable you to run the scripts manually if need be.

- `compositeAddUser.exp`

Adds a user on the Tandem Himalaya system.

Syntax:

```
compositeAddUser.exp safecom=<safecompath>  
fullusername=<fullusername> suuser=<suusername>  
sugroup=<sugroup> supasswd=<supasswd> [ owner=<ownerID> |  
expires=<expiresDate> | passwordChange=<numberOfDays> |  
passwordGrace=<numberOfDays> |  
passwordExpires=<passwordExpiryDate> |  
primaryGroup=<primaryGroup> |  
remotePassword=<remotePassword> |  
defaultProtection=<defaultProtection> |  
initialFile=<initialFile> | initialDir=<initialDir> |  
initialProgType=<PROGRAM | SERVICE | WINDOW> ]
```

- `modifyUser.exp`

Modifies a user on the Tandem Himalaya system.

Syntax:

```
modifyUser.exp safecom=<safecompath>
fullusername=<fullusername> suuser=<suusername>
sugroup=<sugroup> supasswd=<supasswd> [ owner=<ownerID> |
expires=<expiresDate> | passwordChange=<numberOfDays> |
passwordGrace=<numberOfDays> |
passwordExpires=<passwordExpiryDate> |
primaryGroup=<primaryGroup> |
remotePassword=<remotePassword> |
defaultProtection=<defaultProtection> |
initialFile=<initialFile> | initialDir=<initialDir> |
initialProgType=<PROGRAM | SERVICE | WINDOW> ]
```

- `resetPassword.exp`

Resets an existing user's password on the Tandem Himalaya system.

Syntax:

```
resetPassword.exp safecom=<safecompath>
fullusername=<fullusername> password=<password>
suuser=<suusername> sugroup=<sugroup> supasswd=<supasswd>
```

- `enableUser.exp`

Enables (THAW) an existing, disabled user on the Tandem system.

Syntax:

```
enableUser.exp safecom=<safecompath>
fullusername=<fullusername> suuser=<suusername>
sugroup=<sugroup> supasswd=<supasswd>
```

- `disableUser.exp`

Disables (FREEZE) an existing, disabled user on the Tandem system.

Syntax:

```
disableUser.exp safecom=<safecompath>
fullusername=<fullusername> suuser=<suusername>
sugroup=<sugroup> supasswd=<supasswd>
```

- `deleteUser.exp`

Deletes a user from the Tandem system.

Syntax:

```
deleteUser.exp safecom=<safecompath>  
fullusername=<fullusername> suuser=<suusername>  
sugroup=<sugroup> supasswd=<supasswd> server=<server>
```

- `doTest.exp`

Tests the connection parameters to the Tandem system.

Syntax:

```
doTest.exp safecom=<safecompath> server=<server IP>  
suuser=<suusername> sugroup=<sugroup> supasswd=<supasswd>
```

- `genericCommand.exp`

Executes any Tandem command on the system.

Syntax:

```
genericCommand.exp safecom=<safecompath> server=<server  
IP> command=<"Command"> suuser=<suusername>  
sugroup=<sugroup> supasswd=<supasswd>
```

## 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 home page on the Select Identity client.

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**.

After deleting the connector, you can remove the Expect scripts as well. Remove the scripts from the directory on the Select Identity server where they were extracted (see [Step 2 on page 10](#)).