

HP Select Identity Software

Universal Connector

Connector Version: 3.61

Installation and Configuration Guide

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Software Release Date: September 2007



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- 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
- SOAP developed by the Apache Software Foundation
- JavaMail from SUN Reference Implementation
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- Java Cryptography Extension (JCE) from SUN Reference Implementation
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1 Documentation Map

This chapter describes the organization of HP Select Identity connector documentation and provides necessary information on how to use the documentation set to install and configure the connectors.

Figure 1 illustrates the documentation map for Select Identity connector. For a list of available product documentation, refer to the table 1.

Figure 1 Documentation Map



Table 1 Connector Documentation

Document Title and Filename	Contents	Location
<i>Release Note</i> Universal Connector v3.51 Release Note.htm	This file contains necessary information on new features of the connector, enhancements, known problems or limitations, and support information.	/Docs/ subdirectory under the connector directory.
<i>Connector Deployment Guide (for Select Identity 4.20)</i> connector_deploy_SI4.20.pdf	Connector deployment guides provide detailed information on: <ul style="list-style-type: none"> • Deploying a connector on an application server. • Configuring a connector with Select Identity. Refer to these guides when you need generic information on connector installation.	/Docs/ root directory on the product's CD media.
<i>Connector Deployment Guide (for Select Identity 4.10-4.13)</i> connector_deploy_SI4.13.pdf		
<i>Connector Deployment Guide (for Select Identity 4.0-4.01)</i> connector_deploy_SI4.pdf		
<i>Connector Deployment Guide (for Select Identity 3.3.1)</i> connector_deploy_SI3.3.1.pdf		
<i>Connector Installation and Configuration Guide</i> Universal_guide.pdf	Connector installation and configuration guide provides installation instructions for a specific connector. It contains resource specific configuration details.	/Docs/ subdirectory under the connector directory.

2 Introduction

This chapter gives an overview of the HP Select Identity and the Universal connector. At the end of this chapter, you will be able to know about:

- The benefits of HP Select Identity.
- The role of a connector.
- The Universal connector.

About HP Select Identity

HP Select Identity provides a new approach to identity management. It helps you manage the entire identity lifecycle of an enterprise application. Select Identity helps you automate the process of provisioning and managing user accounts and access privileges across platforms, applications, and corporate boundaries. Select Identity communicates with the enterprise information system through connectors, and automates the tasks of identity management. The enterprise information system, which is also referred to as **resource**, can be a database, a directory service, or an ERP package, among many others.

About Connectors

You can establish a connection between a resource and Select Identity by using a connector. A connector is resource specific. It is installed on the system where Select Identity is installed. The combination of Select Identity and connector helps you perform a set of tasks on the resource to manage identity. A connector can be **unidirectional** or **bidirectional**. A unidirectional connector helps you manage identities from Select Identity, but if any change takes place in resource, it cannot communicate that back to Select Identity. On the other hand, a bidirectional connector can reflect the changes made on resource back to Select Identity. This property of bidirectional connectors is known as **reverse synchronization**.

About the Universal Connector

The Universal connector enables Select Identity to generate a request and write the request to a file or email message for each provisioning task performed on the Select Identity user interface. The resulting request is, by default, in SPML format, though you can specify the format of the request by passing a parameter to the connector and providing an XSL translation file. This is useful, for example, if you need to create a CSV request. The connector also works as a NULL connector, producing no output. This functionality can be used to track user attributes.

The Universal connector enables Select Identity to perform the following tasks:

- Add, update, and remove users
- Enable and disable users
- Reset user passwords
- Expire and reactivate user passwords
- Grant and revoke entitlements to and from users



The Universal connector can be used with Select Identity 3.3.1-4.20.

Overview of Installation Tasks

Before you start installing the connector, you must ensure that system requirements and all the installation prerequisites are met. Refer to the [Table 2](#) for an overview of installation tasks.

Table 2 Organization of Tasks

Task Number	Task Name	Reference
1	Install the connector on the Select Identity server.	See Installing the Connector on page 11.
	— Meet the system requirements.	See System Requirements on page 12.
	— Extract contents of the Schema file (file that contains the mapping files for the connector) to location on the Select Identity server.	See Extracting Contents of the Schema File on page 12.
	— Install the Resource Adapter Archive (RAR) of the connector on an application server.	See Installing the Connector RAR on page 12.
2	Configure the connector with the Select Identity server.	See Configuring the Connector with Select Identity on page 13.

3 Installing the Connector

This chapter elaborates the procedure to install Universal connector on Select Identity server. At the end of this chapter, you will know about

- Software requirements to install the Universal connector.
- Prerequisite conditions to install Universal connector.
- Procedure to install Universal connector.

Universal Connector Files

The Universal connector is packaged in the following files in the Universal Connector directory on the Select Identity Connector CD:

Table 3 Universal Connector Files

Serial Number	File Name	Description
1	<ul style="list-style-type: none">• UniversalConnector_420.rar for WebSphere• UniversalConnector_420WL9.rar for WebLogic	The Resource Adapter Archive (RAR) file contains the connector binaries.
2	UnivConnectorSchema.jar	The Schema file contains the default attribute mappings for the connector.

System Requirements

The Universal connector is supported in the following environment:

Table 4 Platform Matrix for Universal connector

Select Identity Version	Application Server	Database
3.3.1	WebLogic 8.1.4 on Windows 2003	Microsoft SQL Server 2000
	WebLogic 8.1.4 on Solaris 9	Oracle 9i
	WebLogic 8.1.4 on Red Hat Enterprise Linux 3.0	Oracle 9i
	WebLogic 8.1.4 on HP-UX 11i	Oracle 9i
	WebSphere 5.1.1 on Solaris 9	DB2 8.2 (or DB2 8.1 Service Pack 7)
4.0-4.20	The Universal connector is supported on all the platform configurations of Select Identity 4.0-4.20.	

Extracting Contents of the Schema File

The Schema file of the connector contains necessary mapping information to map resource attributes to Select Identity. Extract contents of the `UnivConnectorSchema.jar` file to a directory that is in the application server `CLASSPATH`. Refer to the *HP Select Identity Connector Deployment Guide* for detailed instruction to extract contents of the Schema file.

Installing the Connector RAR

To install the RAR file of the connector (such as `UniversalConnector_420.rar`) on the Select Identity server, you must copy the file to a local subdirectory on the Select Identity server, and then deploy on the application server. Refer to the *HP Select Identity Connector Deployment Guide* for detailed information on deploying a RAR file on an application server.



While deploying the RAR on WebSphere, enter the JNDI Pool Name as **eis/UniversalConnector**.

After deploying the connector RAR on application server, you must configure Universal connector with Select Identity. Refer to [Configuring the Connector with Select Identity](#) on page 13 for configuration steps.

4 Configuring the Connector with Select Identity

This chapter describes the procedure to configure the Universal connector with Select Identity. At the end of this chapter, you will know the procedure to configure the Universal connector with Select Identity.

Configuration Procedure

After you deploy the connector RAR on application server, you must configure the connector with Select Identity. Perform the following steps to configure the Universal connector with Select Identity.

- 1 Add a New Connector
- 2 Add a New Resource
- 3 Map Attributes

Add a New Connector

Add a new connector in Select Identity by using the user interface. While adding the connector, do the following:

- In the Connector Name text box, specify a name for the connector.
- In the Pool Name text box, enter **eis/UniversalConnector**.
- Select No for the Mapper Available section.

Refer to the *HP Select Identity Connector Deployment Guide* for detailed information on adding a new connector in Select Identity.

Add a New Resource

Add a new resource in Select Identity that uses the newly added connector. Refer to the *HP Select Identity Connector Deployment Guide* for detailed instructions on adding a resource in Select Identity.

Refer to the following table while entering the parameters in the Basic Information and the Access Information pages:

Table 5 Resource Configuration Parameters

Field Name	Sample Values	Description	Comment
Resource Name	Universal_connector	Name of the target resource.	
Connector Name	ASCII	The newly deployed connector.	Known as Resource Type on Select Identity 3.3.1.
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 the Universal connector, select this option.	Applicable only on Select Identity 3.3.1.
File	C:\tmp\request.txt	The path to the file that will be generated. Specify a value in this field only if you wish to generate a file.	
Mail To	admin@abc.com	The email address to which the request is sent. Specify a value in this field only if you wish to send an email.	

Table 5 Resource Configuration Parameters (cont'd)

Field Name	Sample Values	Description	Comment
Mail Subject	Provisioning Request	The subject of the email message. Specify a value in this field only if you wish to send an email.	
XSLT File	SPML-CSV.xsl	Name of the XSL file, if you wish to create a file that is not formatted using SPML.	
Mapping File	UnivConnectorMapping.xml	Location of the connector mapping file.	

Map Attributes

After successfully adding a resource for the Universal connector, you must map the resource attributes to Select Identity attributes. Refer to the *HP Select Identity Connector Deployment Guide* for information on mapping and creating attributes. While mapping attributes, refer to the following table for resource specific mapping information.

Table 6 Universal Connector Mapping Information

Select Identity Resource Attribute	Request Attribute
User Name	userName
Password	password
Person Number	userId
Home Directory	directory
First Name	firstName
Last Name	lastName
Middle Name	middleName
[First Name] [Middle Name] [Last Name]	fullName
Email	email
Department	department
Title	title
Company	company
PhBus	busPhone

Table 6 Universal Connector Mapping Information (cont'd)

Select Identity Resource Attribute	Request Attribute
PhHome	homePhone
Fax Number	faxNumber
Address 1	address1
Address 2	address2
City	city
State	state
Zip	zip
Country	country
Description	description
Job Description	jobDescription

Entitlement Attribute Mappings

The following entitlements are mapped by default in the connector's mapping file:

- Administrators
- Backup Operators
- Guests
- Network Configuration Operators
- Power Users
- Remote Desktop Users
- Replicator
- Users
- Debugger Users
- HelpServicesGroup

You can edit the XML mapping file (or create a new one) to reflect a new set of entitlements.

After mapping the attributes, you can use the connector to create a service, or you can associate the connector with an existing service. Refer to the *Service Studio* chapter of the *HP Select Identity Administration Online Help* for information on Select Identity services.

Configuring the Connector Data Check

In order to enable the Connector to work properly when you add users, you also need to configure data check for the connector. This way the connector will perform data check to see if a user exists already, then the connector decides if it needs to modify the user or create a new user.

Perform the following steps to configure the connector data check:

- 1 Create table *UniversalStore* in an existing database with the script below:

```
CREATE TABLE UniversalStore
(
KEYVALUE VARCHAR2(64 BYTE) Not NULL,
SAVE_PATH VARCHAR2(256 BYTE) Not NULL,
CREATE_DATE DATE,
ACTION_TYPE INTEGER,
ID INTEGER Not NULL Primary key
)
```

- 2 Define ID number increment strategy for the ID item in the *UniversalStore* table with the following script:

On Oracle: Use the sequence

```
CREATE SEQUENCE RECORD_ID
START WITH 1
INCREMENT BY 1
MINVALUE 1
NOCACHE
NOCYCLE
NOORDER
```

On SQL Server: Define the ID column as the increment column.

- 3 Configure data access information in the schema file *UniversalConfig.properties* (which is present in *UnivConnectorSchema.jar* file) as shown in the sample below:

```
#JDBC info
jdbc.datasource=jdbc/TruAccess
jdbc.databaseType=oracle
```

5 Uninstalling the Connector

If you want to uninstall a connector from Select Identity, perform the following steps:

- Remove all resource dependencies.
- Delete the connector from Select Identity.
- Delete the connector from application server.

See *HP Select Identity Connector Deployment Guide* for more information on deleting the connector from application server and Select Identity.

A Sample SPML Requests

The following are the sample requests generated for most of the user provisioning operations invoked from the Select Identity interface. Use these samples to create an XSL file that will translate output files that are in a format other than SPML.

- Create user

This generates one `addRequest` that contains all attributes of the user.

```
<spml:addRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trulogica:concerco:2.0#date'>
      <dsml:value>Mon Aug 01 15:28:03 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:attributes>
    <dsml:attr name='password'>
      <dsml:value>Welcome</dsml:value>
    </dsml:attr>
    <dsml:attr name='userName'>
      <dsml:value>Aug0101</dsml:value>
    </dsml:attr>
    <dsml:attr name='busPhone'>
      <dsml:value>1234</dsml:value>
    </dsml:attr>
    <dsml:attr name='address1'>
      <dsml:value>XYZ Building</dsml:value>
    </dsml:attr>
    <dsml:attr name='homePhone'>
      <dsml:value>5678</dsml:value>
    </dsml:attr>
    <dsml:attr name='firstName'>
      <dsml:value>abc</dsml:value>
    </dsml:attr>
    <dsml:attr name='department'>
      <dsml:value>PQR</dsml:value>
    </dsml:attr>
    <dsml:attr name='company'>
      <dsml:value>HP</dsml:value>
    </dsml:attr>
    <dsml:attr name='lastName'>
      <dsml:value>Aug0101LN</dsml:value>
    </dsml:attr>
    <dsml:attr name='address2'>
      <dsml:value>OMB </dsml:value>
```

```

</dsml:attr>
<dsml:attr name='country'>
  <dsml:value>ABC</dsml:value>
</dsml:attr>
<dsml:attr name='fullName'>
  <dsml:value>domino Aug0101LN</dsml:value>
</dsml:attr>
<dsml:attr name='jobDescription'>
  <dsml:value>ABCD</dsml:value>
</dsml:attr>
<dsml:attr name='state'>
  <dsml:value>EFGH</dsml:value>
</dsml:attr>
<dsml:attr name='email'>
  <dsml:value>Aug0101@hp.com</dsml:value>
</dsml:attr>
<dsml:attr name='zip'>
  <dsml:value>00000</dsml:value>
</dsml:attr>
<dsml:attr name='city'>
  <dsml:value>Xyz</dsml:value>
</dsml:attr>
</spml:attributes>
</spml:addRequest>

```

- **Update user attributes**
This generates one `modifyRequest`.

```

<spml:modifyRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:conceroc:2.0#date'>
      <dsml:value>Mon Aug 01 15:36:39 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:modifications>
    <dsml:modification name='password' operation='replace'>
      <dsml:value>Welcome</dsml:value>
    </dsml:modification>
    <dsml:modification name='busPhone' operation='replace'>
      <dsml:value>1234</dsml:value>
    </dsml:modification>
    <dsml:modification name='address1' operation='replace'>
      <dsml:value>Ijkl</dsml:value>
    </dsml:modification>
    <dsml:modification name='homePhone' operation='replace'>
      <dsml:value>2345</dsml:value>
    </dsml:modification>
    <dsml:modification name='firstName' operation='replace'>
      <dsml:value>domino</dsml:value>
    </dsml:modification>
    <dsml:modification name='department' operation='replace'>
      <dsml:value>PQR</dsml:value>
    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

```

</dsml:modification>
<dsml:modification name='company' operation='replace'>
  <dsml:value>HP</dsml:value>
</dsml:modification>
<dsml:modification name='lastName' operation='replace'>
  <dsml:value>Aug0101LN</dsml:value>
</dsml:modification>
<dsml:modification name='address2' operation='replace'>
  <dsml:value>123 XYZ</dsml:value>
</dsml:modification>
<dsml:modification name='country' operation='replace'>
  <dsml:value>XYZ</dsml:value>
</dsml:modification>
<dsml:modification name='fullName' operation='replace'>
  <dsml:value>domino Aug0101LN</dsml:value>
</dsml:modification>
<dsml:modification name='jobDescription'
operation='replace'>
  <dsml:value>WXYZ</dsml:value>
</dsml:modification>
<dsml:modification name='state' operation='replace'>
  <dsml:value>EFG</dsml:value>
</dsml:modification>
<dsml:modification name='email' operation='replace'>
  <dsml:value>Aug0101@hp.com</dsml:value>
</dsml:modification>
<dsml:modification name='zip' operation='replace'>
  <dsml:value>00000</dsml:value>
</dsml:modification>
<dsml:modification name='city' operation='replace'>
  <dsml:value>XYZ</dsml:value>
</dsml:modification>
</spml:modifications>
</spml:modifyRequest>

```

- **Reset password**

This generates one `extendedRequest` with the `urn:trologica:conceroc:2.0#resetPassword` operation and the `newPassword` attribute to which the new password value is assigned.

```

<spml:extendedRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:conceroc:2.0#date'>
      <dsml:value>Mon Aug 01 16:25:09 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:providerIdentifier
providerIDType='urn:oasis:names:tc:SPML:1:0#URN'>
    <spml:providerID>urn:trologica:conceroc:2.0#connector</
    spml:providerID>
  </spml:providerIdentifier>

```

```

<spml:operationIdentifier
  operationIDType='urn:oasis:names:tc:SPML:1:0#URN'>
  <spml:operationID>urn:trulogica:conceroc:2.0#resetPassword</
    spml:operationID>
</spml:operationIdentifier>
<spml:attributes>
  <dsml:attr name='urn:trulogica:conceroc:2.0#newPassword'>
    <dsml:value>Welcome</dsml:value>
  </dsml:attr>
</spml:attributes>
</spml:extendedRequest>

```

- **Disable all services**

This generates one extendedRequest that includes the urn:trulogica:conceroc:2.0#disable operation.

```

<spml:extendedRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
  xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trulogica:conceroc:2.0#date'>
      <dsml:value>Mon Aug 01 16:19:37 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:providerIdentifier
    providerIDType='urn:oasis:names:tc:SPML:1:0#URN'>
    <spml:providerID>urn:trulogica:conceroc:2.0#connector</
      spml:providerID>
  </spml:providerIdentifier>
  <spml:operationIdentifier
    operationIDType='urn:oasis:names:tc:SPML:1:0#URN'>
    <spml:operationID>urn:trulogica:conceroc:2.0#disable</
      spml:operationID>
  </spml:operationIdentifier>
</spml:extendedRequest>

```

- **Enable all services**

This generates one extendedRequest that includes the urn:trulogica:conceroc:2.0#enable operation.

```

<spml:extendedRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
  xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trulogica:conceroc:2.0#date'>
      <dsml:value>Mon Aug 01 16:23:37 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:providerIdentifier
    providerIDType='urn:oasis:names:tc:SPML:1:0#URN'>
    <spml:providerID>urn:trulogica:conceroc:2.0#connector</
      spml:providerID>
  </spml:providerIdentifier>

```



```

<spml:operationIdentifier
  operationIDType='urn:oasis:names:tc:SPML:1:0#URN'>
  <spml:operationID>urn:trulogica:concerro:2.0#enable</
    spml:operationID>
</spml:operationIdentifier>
</spml:extendedRequest>

```

- **Modify user entitlements**

This generates one `modifyRequest` for user attributes followed by a `modifyRequest` for each of the entitlements that was changed.

```

<spml:modifyRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
  xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trulogica:concerro:2.0#date'>
      <dsml:value>Mon Aug 01 15:36:39 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:modifications>
    <dsml:modification name='password' operation='replace'>
      <dsml:value>Welcome</dsml:value>
    </dsml:modification>
    <dsml:modification name='busPhone' operation='replace'>
      <dsml:value>123456</dsml:value>
    </dsml:modification>
    <dsml:modification name='address1' operation='replace'>
      <dsml:value>ABCD</dsml:value>
    </dsml:modification>
    <dsml:modification name='homePhone' operation='replace'>
      <dsml:value>12345</dsml:value>
    </dsml:modification>
    <dsml:modification name='firstName' operation='replace'>
      <dsml:value>domino</dsml:value>
    </dsml:modification>
    <dsml:modification name='department' operation='replace'>
      <dsml:value>PQR</dsml:value>
    </dsml:modification>
    <dsml:modification name='company' operation='replace'>
      <dsml:value>HP</dsml:value>
    </dsml:modification>
    <dsml:modification name='lastName' operation='replace'>
      <dsml:value>Aug0101LN</dsml:value>
    </dsml:modification>
    <dsml:modification name='address2' operation='replace'>
      <dsml:value>123 XYZ</dsml:value>
    </dsml:modification>
    <dsml:modification name='country' operation='replace'>
      <dsml:value>ABC</dsml:value>
    </dsml:modification>
    <dsml:modification name='fullName' operation='replace'>
      <dsml:value>domino Aug0101LN</dsml:value>
    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

```

    <dsml:modification name='jobDescription'
      operation='replace'>
      <dsml:value>EFG</dsml:value>
    </dsml:modification>
    <dsml:modification name='state' operation='replace'>
      <dsml:value>IJK</dsml:value>
    </dsml:modification>
    <dsml:modification name='email' operation='replace'>
      <dsml:value>Aug0101@hp.com</dsml:value>
    </dsml:modification>
    <dsml:modification name='zip' operation='replace'>
      <dsml:value>00000</dsml:value>
    </dsml:modification>
    <dsml:modification name='city' operation='replace'>
      <dsml:value>MNO</dsml:value>
    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

- **Remove the Administrator entitlement**

This generates one modifyRequest that deletes the entitlement.

```

<spml:modifyRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
  xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:concerro:2.0#date'>
      <dsml:value>Mon Aug 01 16:27:33 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:modifications>
    <dsml:modification name='urn:trologica:concerro:2.0#groups'
      operation='delete'>
      <dsml:value>Administrators</dsml:value>
    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

- **Add Backup Operators entitlement**

This generates one modifyRequest that adds the entitlement.

```

<spml:modifyRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
  xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:concerro:2.0#date'>
      <dsml:value>Mon Aug 01 16:33:37 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:modifications>
    <dsml:modification name='urn:trologica:concerro:2.0#groups'
      operation='add'>
      <dsml:value>Backup Operators</dsml:value>
    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

```

    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

- **Delete user (terminate user)**
This generates a deleteRequest.

```

<spml:deleteRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:conceroc:2.0#date'>
      <dsml:value>Mon Aug 01 16:27:33 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0104</spml:id>
  </spml:identifier>
</spml:deleteRequest>

```

- **Add user with Debugger Users and Guests entitlements**
This generates one addRequest followed by two modifyRequests, one for each entitlement added.

```

<spml:addRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:conceroc:2.0#date'>
      <dsml:value>Mon Aug 01 23:35:34 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0104</spml:id>
  </spml:identifier>
  <spml:attributes>
    <dsml:attr name='password'>
      <dsml:value>Welcome</dsml:value>
    </dsml:attr>
    <dsml:attr name='userName'>
      <dsml:value>Aug0104</dsml:value>
    </dsml:attr>
    <dsml:attr name='fullName'>
      <dsml:value>Aug0104FN Aug0104FN</dsml:value>
    </dsml:attr>
    <dsml:attr name='firstName'>
      <dsml:value>Aug0104FN</dsml:value>
    </dsml:attr>
    <dsml:attr name='city'>
      <dsml:value>WXYZ</dsml:value>
    </dsml:attr>
    <dsml:attr name='lastName'>
      <dsml:value>Aug0104FN</dsml:value>
    </dsml:attr>
  </spml:attributes>
</spml:addRequest>

```

```

<spml:modifyRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>

```

```

<spml:operationalAttributes>
  <dsml:attr name='urn:trologica:concero:2.0#date'>
    <dsml:value>Mon Aug 01 23:35:35 CDT 2005</dsml:value>
  </dsml:attr>
</spml:operationalAttributes>
<spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
  <spml:id>Aug0104</spml:id>
</spml:identifier>
<spml:modifications>
  <dsml:modification name='urn:trologica:concero:2.0#groups'
    operation='add'>
    <dsml:value>Debugger Users</dsml:value>
  </dsml:modification>
</spml:modifications>
</spml:modifyRequest>

```

```

<spml:modifyRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
  xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:concero:2.0#date'>
      <dsml:value>Mon Aug 01 23:35:35 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0104</spml:id>
  </spml:identifier>
  <spml:modifications>
    <dsml:modification name='urn:trologica:concero:2.0#groups'
      operation='add'>
      <dsml:value>Guests</dsml:value>
    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

- **Delete Service membership**
 This generates one `modifyRequest` that deletes the entitlement for each of the user's entitlements, followed by one `deleteRequest`.

```

<spml:modifyRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
  xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:concero:2.0#date'>
      <dsml:value>Mon Aug 01 16:27:33 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:modifications>
    <dsml:modification name='urn:trologica:concero:2.0#groups'
      operation='delete'>
      <dsml:value>Administrators</dsml:value>
    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

```

<spml:modifyRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:concerro:2.0#date'>
      <dsml:value>Mon Aug 01 16:27:33 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:modifications>
    <dsml:modification name='urn:trologica:concerro:2.0#groups'
operation='delete'>
      <dsml:value>Debugger Users</dsml:value>
    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

```

<spml:modifyRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:concerro:2.0#date'>
      <dsml:value>Mon Aug 01 16:27:33 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
  <spml:modifications>
    <dsml:modification name='urn:trologica:concerro:2.0#groups'
operation='delete'>
      <dsml:value>Power Users</dsml:value>
    </dsml:modification>
  </spml:modifications>
</spml:modifyRequest>

```

```

<spml:deleteRequest xmlns:spml='urn:oasis:names:tc:SPML:1:0'
xmlns:dsml='urn:oasis:names:tc:DSML:2:0:core'>
  <spml:operationalAttributes>
    <dsml:attr name='urn:trologica:concerro:2.0#date'>
      <dsml:value>Mon Aug 01 16:27:33 CDT 2005</dsml:value>
    </dsml:attr>
  </spml:operationalAttributes>
  <spml:identifier type='urn:oasis:names:tc:SPML:1:0#GUID'>
    <spml:id>Aug0101</spml:id>
  </spml:identifier>
</spml:deleteRequest>

```


B Sample SPML-to-CSV Conversion

The `UnivConnectorSchema.jar` file provided with the connector contains a sample XSL file called `SPML-CSV.xsl` that converts SPML requests to entries in a CSV file. The following is the output of this XSL file for the operation requests generated by the connector.

- **Add a new user with two entitlements:**

```
userAdd user032201 password="abc123",userName="user032201",
country="MNO",fullName="user Test032201",
email="user032201@hp.com",state="PQR",firstName="user",
city="ABC",department="OVSI",company="HP",lastName="Test032201"
entAdd user032201 "Remote Desktop Users"
entAdd user032201 "Users"
```

- **Modify user attributes, remove one entitlement, and add a new entitlement:**

```
userModify user032201 password="abc123",busPhone="",
address1="",homePhone="",firstName="user",
department="HP OVSI",lastName="Changed",company="HP",
address2="",country="MNO",fullName="user Changed",
state="PQR",email="user032201@hp.com",zip="00000",city="ABC"
entAdd user032201 "Network Configuration Operators"
entDelete user032201 "Users"
```

- **Disable Service membership:**

```
entDelete user032201 "Network Configuration Operators"
entDelete user032201 "Remote Desktop Users"
```

- **Enable Service membership:**

```
entAdd user032201 "Network Configuration Operators"
entAdd user032201 "Remote Desktop Users"
```

- **Disable all services:**

```
userDisable user032201
```

- **Enable all Services:**

```
userEnable user032201
```

- **Delete Service membership:**

```
entDelete user032201 "Network Configuration Operators"
entDelete user032201 "Remote Desktop Users"
userDelete user032201
```

