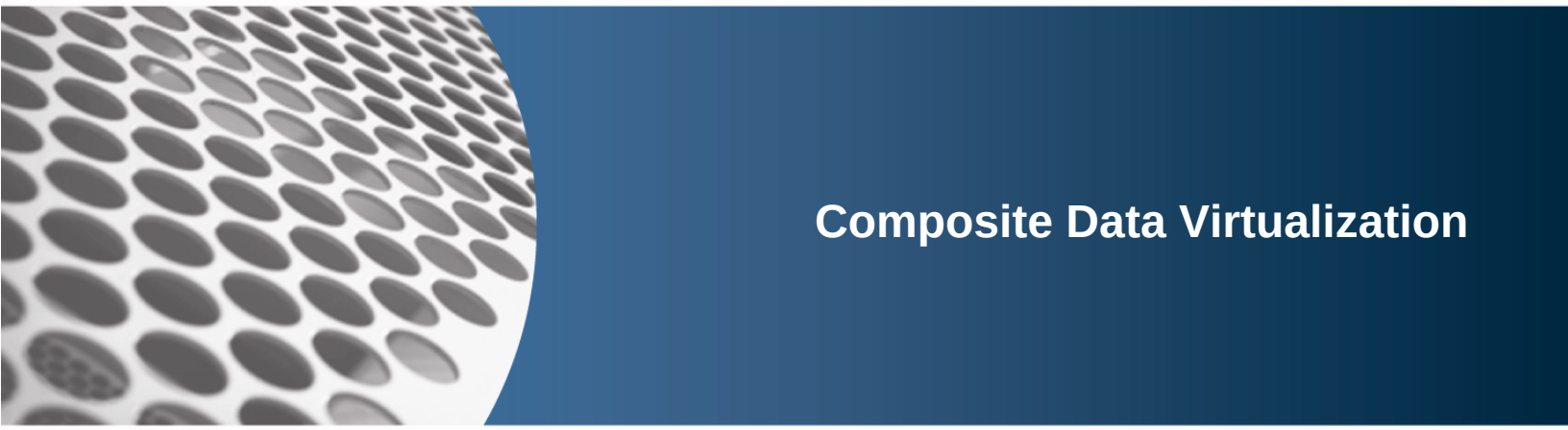
WHITE PAPER

COMPOSITE SOFTWARE



Composite PS Promotion and Deployment Tool

User Module User Guide

Composite Professional Services

March 2014

TABLE OF CONTENTS

DOCUMENT CONTROL

Version History

Version	Date	Author	Description
1.0	6/10/2011	Mike Tinius	Initial revision for User Module User Guide
1.0.1	8/1/2011	Mike Tinius	Revisions due to architecture changes
1.1	3/9/2012	Mike Tinius	Explained Generate User some more
1.2	10/1/2012	Mike Tinius	Fixed doc issue with privilege list
3.0	8/21/2013	Mike Tinius	Updated docs to Cisco format.
3.1	2/18/2014	Mike Tinius	Prepare docs for open source.
3.2	3/24/2014	Mike Tinius	Changed references of XML namespace to www.dvbu.cisco.com

Related Documents

Document	File Name	Author
Composite PS Promotion and Deployment Tool User's Guide v1.0	*Composite PS Promotion and Deployment Tool User's Guide v1.0.pdf*	Mike Tinius

Composite Products Referenced

Composite Product Name	Version
Composite Information Server	5.1, 5.2, 6.0, 6.1, 6.2

INTRODUCTION

Purpose

The purpose of the User Module User Guide is to demonstrate how to effectively use the User Module and execute actions. Users are managed within the browser-based Composite Manager. The User Module will allow the automation of creating, updating, deleting users as well as generating the User Module XML property file.

Audience

This document is intended to provide guidance for the following users:

- Architects
- Developers
- Administrators.
- Operations personnel.

USER MODULE DEFINITION

Method Definitions and Signatures

1. **createOrUpdateUsers**

   Create or update a CIS user based on the list of user Ids passed into this method. The method will check to see if a user exists. If it does not exist, the createUsers() is invoked otherwise updateUsers() is invoked. Whatever attributes are set in the XML will be updated for that user.

```
@param serverId - target server name

@param userIds - comma separated list of user names to create or
update.

@param pathToUsersXML - path including name to the users XML
containing a list of UserIds to execute against

@param pathToServersXML - path to the server values XML

@return void

@throws CompositeException


public void createOrUpdateUsers(String serverId, String userIds,
String pathToUsersXML, String pathToServersXML) throws
CompositeException;
```

2. **deleteUsers**

   Delete a user from the CIS server instance. If the user does not exist, no action is taken and no error is thrown.

```
@param serverId - target server name

@param userIds - comma separated list of user names to be deleted.

@param pathToUsersXML - path including name to the users XML
containing a slit of UserIds to execute against

@param pathToServersXML - path to the server values XML

@return void

@throws CompositeException


public void deleteUsers(String serverId, String userIds, String
pathToUsersXML, String pathToServersXML) throws CompositeException;
```

3. **generateUsersXML**

   Generate the UserModule XML property file based on a domain and the CIS server instance referenced. Unlike other modules that provide a starting path, this module takes in a domain name (i.e. composite). The method generateUsersXML does not export or generate the user name from Composite.

```
@param serverId - target server name

@param doaminName - domain name from which to get a list of users.  If
null get all users from all domains.

@param pathToUsersXML - path including name to the users XML which
will get created

@param pathToServersXML - path to the server values XML

@return void

@throws CompositeException


public void generateUsersXML(String serverId, String doaminName,
String pathToUsersXML, String pathToServersXML) throws
CompositeException;
```

General Notes:

The arguments pathToUsersXML and pathToServersXML will be located in [PDTool/resources/modules]. The value passed into the methods will be the fully qualified path. The paths get resolved when executing the property file and evaluating the $MODULE_HOME variable.

USER MODULE XML CONFIGURATION

A full description of the PDToolModule XML Schema can be found by reviewing /docs/PDToolModules.xsd.html.

Description of the Module XML

The UserModule XML provides a structure “user” for creating, updating, deleting and generating the user XML. The global entry point node is called “UserModule” and contains one or more “user” nodes.

```
<?xml version="1.0"?>
<p1:UserModule xmlns:p1="http://www.dvbu.cisco.com/ps/deploytool/modules">
    <user>
        <id>user1</id>
        <userName >user1</userName >
        <encryptedPassword>password1</encryptedPassword>
        <forcePassword>true</forcePassword>
        <domainName>composite</domainName>
        <groupMembershipList>
            <groupName>all</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <groupMembershipList>
            <groupName>group1</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <groupMembershipList>
            <groupName>group2</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <privilege>ACCESS_TOOLS</privilege>
       <annotation>user1</annotation>
    </user>
    <user>
        <id>user2</id>
        <userName>user2</userName >
        <encryptedPassword>Encrypted:7F6324FFD300BE8F</encryptedPassword>
        <forcePassword>false</forcePassword>
        <domainName>composite</domainName>
        <groupMembershipList>
            <groupName>all</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <groupMembershipList>
            <groupName>group2</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <privilege>ACCESS_TOOLS MODIFY_ALL_CONFIG MODIFY_ALL_RESOURCES
MODIFY_ALL_STATUS MODIFY_ALL_USERS READ_ALL_CONFIG READ_ALL_RESOURCES
READ_ALL_STATUS READ_ALL_USERS UNLOCK_RESOURCE</privilege>
    </user>
</p1:UserModule>
```

Attributes of Interest

username – this value is the actual server attribute path and is unique across all server attribute configurations. The same path describes the server attribute and the server attribute definition.

encryptedPassword – may contain a clear text or encrypted password. If clear text, the User Module will encrypt the password prior to creating or updating a user. Optionally, the user may execute the Deploy Tool script "ExecuteEncrypt.bat or .sh" to encrypt all "encryptedPassword" values in the specified file. E.g. ExecuteEncrypt.bat /path/to/file.xml

It should be noted that "generatUserXML()" does not generate the password or export the password from Composite.

forcePassword – this Boolean (true or false) value is used during update of a user. If the user exists and forcePassword=true, then the encryptedPassword value is passed into the updateUser method. If the user does not exist, then this value is ignored.

domainName – this value is tells the system which "valid' domain the user belongs to.

groupMembershipList – this is a list of group name/domain name pairs. If the user does not exist, then the user is assigned to whatever groups are in the list. If the user does exist, then the user is updated with whatever values are in the list.

annotation – this value is provides a description (annotation) about the user.

Attribute Value Restrictions

privilege – A space separated list of Privilege Access Rights that may include 1 or more of [ACCESS_TOOLS MODIFY_ALL_CONFIG MODIFY_ALL_RESOURCES MODIFY_ALL_STATUS MODIFY_ALL_USERS READ_ALL_CONFIG READ_ALL_RESOURCES READ_ALL_STATUS READ_ALL_USERS UNLOCK_RESOURCE]

Schema validation uses the following set:

```
<xs:element name="privilege" maxOccurs="unbounded" minOccurs="0">
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:enumeration value="ACCESS_TOOLS"/>
            <xs:enumeration value="MODIFY_ALL_CONFIG"/>
            <xs:enumeration value="MODIFY_ALL_RESOURCES"/>
            <xs:enumeration value="MODIFY_ALL_STATUS"/>
            <xs:enumeration value="MODIFY_ALL_USERS"/>
            <xs:enumeration value="READ_ALL_CONFIG"/>
            <xs:enumeration value="READ_ALL_RESOURCES"/>
            <xs:enumeration value="READ_ALL_STATUS"/>
            <xs:enumeration value="READ_ALL_USERS"/>
            <xs:enumeration value="UNLOCK_RESOURCE"/>
        </xs:restriction>
    </xs:simpleType>
</xs:element>
```

HOW TO EXECUTE

The following section describes how to setup a property file for both command line and Ant and execute the script. This script will use the UserModule.xml that was described in the previous section.

Script Execution

The full details on property file setup and script execution can be found in the document "*Composite PS Promotion and Deployment Tool User's Guide v1.0.pdf*". The abridged version is as follows:

Windows: ExecutePDTool.bat -exec ../resources/properties/UnitTest-User.dp

Unix: ./ExecutePDTool.sh -exec ../resources/properties/UnitTest-User.dp

Properties File (UnitTest-User.properties):

Property File Rules:

```
# ----------------------------
# UnitTest-User.dp
# ----------------------------
#   1. All parameters are space separated.  Commas are not used.
#         a. Any number of spaces may occur before or after any parameter and are
trimmed.
#
#   2. Parameters should always be enclosed in double quotes according to these
rules:
#         a. when the parameter value contains a comma separated list:
#                                     ANSWER: "ds1,ds2,ds3"
#
#         b. when the parameter value contain spaces or contains a dynamic variable
that will resolve to spaces
#            i.   There is no distinguishing between Windows and Unix variables.
Both UNIX style variables ($VAR) and
#                 and Windows style variables (%VAR%) are valid and will be parsed
accordingly.
#            ii.  All parameters that need to be grouped together that contain
spaces are enclosed in double quotes.
#            iii. All paths that contain or will resolve to a space must be enclosed
in double quotes.
#                 An environment variable (e.g. $MODULE_HOME) gets resolved on
invocation CisDeployTool.
#                       Paths containing spaces must be enclosed in double quotes:
#                              ANSWER: "$MODULE_HOME/LabVCSModule.xml"
#                       Given that MODULE_HOME=C:/dev/Cis Deploy
Tool/resources/modules, CisDeployTool automatically resolves the variable to
#                       "C:/dev/Cis Deploy Tool/resources/modules/LabVCSModule.xml".
#
#         c. when the parameter value is complex and the inner value contains spaces
```

```
#                    i. In this example $PROJECT_HOME will resolve to a path that
contains spaces such as C:/dev/Cis Deploy Tool
#                       For example take the parameter -pkgfile
$PROJECT_HOME$/bin/carfiles/testout.car.
#                       Since the entire command contains a space it must be
enclosed in double quotes:
#                                ANSWER: "-pkgfile
$PROJECT_HOME/bin/carfiles/testout.car"
#
#   3. A comment is designated by a # sign preceding any other text.
#         a. Comments may occur on any line and will not be processed.
#
#   4. Blank lines are not processed
#         a. Blank lines are counted as lines for display purposes
#         b. If the last line of the file is blank, it is not counted for display
purposes.
#
```

Property File Parameters:

```
# ----------------------------
# Parameter Specification:
# ----------------------------
# Param1=[PASS or FAIL]  :: Expected Regression Behavior.  Informs the script
whether you expect the action to pass or fail.  Can be used for regression testing.
# Param2=[TRUE or FALSE] :: Exit Orchestration script on error
# Param3=Module Batch/Shell Script name to execute (no extension).  Extension is
added by script.
# Param4=Module Action to execute
# Param5-ParamN=Specific space separated parameters for the action.  See Property
Rules below.
```

Property File Example:

```
# ----------------------------------------
# Begin task definition list:
# ----------------------------------------
# Generate
PASS   FALSE  ExecuteAction generateUsersXML          $SERVERID "composite"
$MODULE_HOME/getUserModule.xml $MODULE_HOME/servers.xml
# Delete
PASS   FALSE  ExecuteAction   deleteUsers             $SERVERID "user1"
$MODULE_HOME/UserModule.xml $MODULE_HOME/servers.xml
# Create or Update
PASS   FALSE  ExecuteAction   createOrUpdateUsers     $SERVERID "user1"
$MODULE_HOME/UserModule.xml $MODULE_HOME/servers.xml
```

Ant Execution

The full details on build file setup and ant execution can be found in the document "*Composite PS Promotion and Deployment Tool User's Guide v1.0.pdf*". The abridged version is as follows:

Windows: ExecutePDTool.bat -exec ../resources/ant/build-User.xml

Unix: ./ExecutePDTool.sh -exec ../resources/ant/build-User.xml

Build File:

```
<?xml version="1.0" encoding="UTF-8"?>
<project name="PDTool" default="default" basedir=".">

  <description>description</description>

  <!-- Default properties -->
  <property name="SERVERID"                  value="localhost"/>
  <property name="noarguments"               value="&amp;quot;&amp;quot;"/>

  <!-- Default Path properties -->
  <property name="RESOURCE_HOME"             value="${PROJECT_HOME}/resources"/>
  <property name="MODULE_HOME"               value="${RESOURCE_HOME}/modules"/>
  <property name="pathToServersXML"          value="${MODULE_HOME}/servers.xml"/>
  <property name="pathToArchiveXML"          value="${MODULE_HOME}/ArchiveModule.xml"/>
  <property name="pathToDataSourcesXML"      value="${MODULE_HOME}/DataSourceModule.xml"/>
  <property name="pathToGroupsXML"           value="${MODULE_HOME}/GroupModule.xml"/>
  <property name="pathToPrivilegeXML"        value="${MODULE_HOME}/PrivilegeModule.xml"/>
  <property name="pathToRebindXML"           value="${MODULE_HOME}/RebindModule.xml"/>
  <property name="pathToRegressionXML"       value="${MODULE_HOME}/RegressionModule.xml"/>
  <property name="pathToResourceXML"         value="${MODULE_HOME}/ResourceModule.xml"/>
  <property name="pathToResourceCacheXML"    value="${MODULE_HOME}/ResourceCacheModule.xml"/>
  <property name="pathToServerAttributeXML"  value="${MODULE_HOME}/ServerAttributeModule.xml"/>
  <property name="pathToTriggerXML"          value="${MODULE_HOME}/TriggerModule.xml"/>
  <property name="pathToUsersXML"            value="${MODULE_HOME}/UserModule.xml"/>
  <property name="pathToVCSModuleXML"        value="${MODULE_HOME}/VCSModule.xml"/>

  <!-- Custom properties -->
  <property name="userIds"                   value="user1,user2"/>
  <property name="pathToGenUserXML"          value="${MODULE_HOME}/getUserModule.xml"/>

  <!-- Default Classpath [Do Not Change] -->
  <path id="project.class.path">
        <fileset dir="${PROJECT_HOME}/lib"><include name="**/*.jar"/></fileset>
        <fileset dir="${PROJECT_HOME}/dist"><include name="**/*.jar"/></fileset>
        <fileset dir="${PROJECT_HOME}/ext/ant/lib"><include name="**/*.jar"/></fileset>
  </path>

  <taskdef name="executeJavaAction" description="Execute Java Action"
classname="com.cisco.dvbu.ps.deploytool.ant.CompositeAntTask"
classpathref="project.class.path"/>

  <!-- ================================
       target: default
     ================================ -->
  <target name="default" description="Update CIS with environment specific parameters">

    <!-- Execute Line Here -->
```

```
  <executeJavaAction description="CreateOrUpdate" action="createOrUpdateUsers"
       arguments="${SERVERID}^${userIds}^${pathToUsersXML}^${pathToServersXML}"
       endExecutionOnTaskFailure="TRUE" />

    <!-- Windows or UNIX: Entire list of actions
  <executeJavaAction description="Generate"          action="generateUsersXML"
       arguments="${SERVERID}^composite^${pathToGenUserXML}^${pathToServersXML}"
       endExecutionOnTaskFailure="TRUE" />

  <executeJavaAction description="CreateOrUpdate" action="createOrUpdateUsers"
       arguments="${SERVERID}^${userIds}^${pathToUsersXML}^${pathToServersXML}"
       endExecutionOnTaskFailure="TRUE" />

  <executeJavaAction description="Delete"            action="deleteUsers"
       arguments="${SERVERID}^user1^${pathToUsersXML}^${pathToServersXML}"
       endExecutionOnTaskFailure="TRUE" />
    -->
  </target>
</project>
```

Module ID Usage

The following explanation provides a general pattern for module identifiers. The module identifier for this module is “userIds”.

- Possible values for the module identifier:
- 1. ***Inclusion List*** - CSV string like “id1,id2”
    - CisDeployTool will process only the passed in identifiers in the specified module XML file.

    Example command-line property file

    ```
    PASS   FALSE  ExecuteAction   createOrUpdateUsers     $SERVERID "user1,user2"
    $MODULE_HOME/UserModule.xml $MODULE_HOME/servers.xml
    ```

    Example Ant build file

    ```
      <executeJavaAction description="CreateOrUpdate" action="createOrUpdateUsers"
           arguments="${SERVERID}^user1,user2^${pathToUsersXML}^${pathToServersXML}"
           endExecutionOnTaskFailure="TRUE" />
    ```

    2. ***Process All*** - '*' or whatever is configured to indicate all resources
    - CisDeployTool will process all resources in the specified module XML file.

    Example command-line property file

    ```
    PASS   FALSE  ExecuteAction   createOrUpdateUsers     $SERVERID "*"
    $MODULE_HOME/UserModule.xml $MODULE_HOME/servers.xml
    ```

    Example Ant build file

    ```
      <executeJavaAction description="CreateOrUpdate" action="createOrUpdateUsers"
           arguments="${SERVERID}^*^${pathToUsersXML}^${pathToServersXML}"
           endExecutionOnTaskFailure="TRUE" />
    ```

- 3. ***Exclusion List*** - CSV string with '-' or whatever is configured to indicate exclude resources as prefix like “-id1,id2”

- CisDeployTool will ignore passed in resources and process the rest of the identifiers in the module XML file.

Example command-line property file

```
PASS   FALSE  ExecuteAction   createOrUpdateUsers     $SERVERID "-user1,user2"
$MODULE_HOME/UserModule.xml $MODULE_HOME/servers.xml
```

Example Ant build file

```
  <executeJavaAction description="CreateOrUpdate" action="createOrUpdateUsers"
       arguments="${SERVERID}^-user1,user2^${pathToUsersXML}^${pathToServersXML}"
       endExecutionOnTaskFailure="TRUE" />
```

EXAMPLES

The following are common scenarios when using the User Module.

Scenario 1 – Generate User XML

Description:

Generate the user xml property file based on the domain “composite”.

XML Configuration Sample:

Not applicable for this example.

Execution Sample:

Unix: ./ExecutePDTool.sh -exec ../resources/properties/UnitTest-User.dp

Property file setup for UnitTest-User.properties:

```
# ----------------------------------------
# Begin task definition list for UNIX:
# ----------------------------------------
# Generate
PASS   FALSE  ExecuteAction generateUsersXML    $SERVERID "composite"
$MODULE_HOME/getUserModule.xml $MODULE_HOME/servers.xml
```

Results Expected:

The file getUserModule.xml is produced with only users from the “composite” domain.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:UserModule xmlns:ns2="http://www.dvbu.cisco.com/ps/deploytool/modules">
    <user>
        <id>user1</id>
        <userName>monitor</userName>
... xml removed
    </user>
    <user>
        <id>user2</id>
        <userName>anonymous</userName>
... xml removed
    </user>
    <user>
        <id>user3</id>
        <userName>nobody</userName>
... xml removed
    </user>
    <user>
        <id>user4</id>
        <userName>system</userName>
... xml removed
```

```
    </user>
    <user>
        <id>user5</id>
        <userName>admin</userName>
... xml removed
    </user>
    <user>
        <id>user6</id>
        <userName>user2</userName>
        <encryptedPassword></encryptedPassword>
        <forcePassword>false</forcePassword>
        <domainName>composite</domainName>
        <groupMembershipList>
            <groupName>all</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <groupMembershipList>
            <groupName>group2</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <privilege>ACCESS_TOOLS MODIFY_ALL_CONFIG MODIFY_ALL_RESOURCES
MODIFY_ALL_STATUS MODIFY_ALL_USERS READ_ALL_CONFIG READ_ALL_RESOURCES
READ_ALL_STATUS READ_ALL_USERS UNLOCK_RESOURCE</privilege>
        <annotation>user1</annotation>
    </user>
</ns2:UserModule>
```

Scenario 2 – delete a user

Description:

Delete a user from the CIS server.

XML Configuration Sample:

In preparation for this test, use the browser-based Composite Manager to add a new user called “user1”. Use the UserModule XML file and make sure it has an entry that looks like this:

```
<?xml version="1.0"?>
<p1:UserModule xmlns:p1="http://www.dvbu.cisco.com/ps/deploytool/modules">
    <user>
        <id>user1</id>
        <userName>user1</userName>
        <encryptedPassword>password1</encryptedPassword>
        <forcePassword>true</forcePassword>
        <domainName>composite</domainName>
    </user>
</p1:UserModule>
```

Execution Sample:

Unix: ./ExecutePDTool.sh -exec ../resources/properties/UnitTest-User.dp

Property file setup for UnitTest-User.dp:

```
# ----------------------------------------
# Begin task definition list for UNIX:
# ----------------------------------------
# Delete a user
PASS   FALSE  ExecuteAction   deleteUsers      $SERVERID "user1"
$MODULE_HOME/UserModule.xml $MODULE_HOME/servers.xml
```

Results Expected:

The script will report “PASS” for the execution of this action. Open Composite Manager and review the list of users. The user “user” should be deleted.

Scenario 3 – create or update a user

Description:

Create a user if it does not exist or update it if it does.

XML Configuration Sample:

In preparation for this test, use the browser-based Composite Manager to add two new groups: group1 and group2. Use the UserModule XML file and make sure it has an entry that looks like this:

```
<?xml version="1.0"?>
<p1:UserModule xmlns:p1="http://www.dvbu.cisco.com/ps/deploytool/modules">
    <user>
        <id>user1</id>
        <userName>user1</userName>
        <encryptedPassword>password</encryptedPassword>
        <forcePassword>true</forcePassword>
        <domainName>composite</domainName>
        <groupMembershipList>
            <groupName>all</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <groupMembershipList>
            <groupName>group1</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <groupMembershipList>
            <groupName>group2</groupName>
            <groupDomain>composite</groupDomain>
        </groupMembershipList>
        <privilege>ACCESS_TOOLS</privilege>
```

```
        <annotation>user1</annotation>
    </user>
</p1:UserModule>
```

Execution Sample:

Unix: ./ExecutePDTool.sh -exec ../resources/properties/UnitTest-User.properties

Property file setup for UnitTest-User.properties:

```
# ----------------------------------------
# Begin task definition list for UNIX:
# ----------------------------------------
# Create or Update a user
ExecuteAction   createOrUpdateUsers     $SERVERID "user1"
$MODULE_HOME/UserModule.xml $MODULE_HOME/servers.xml
```

Results Expected:

The script will report “PASS” for the execution of this action. Open Composite Manager and review the list of users. The user “user1” should exist now and it should be assigned to the groups: All, group1 and group2.

EXCEPTIONS AND MESSAGES

The following are common exceptions and messages that may occur.

Wrong Number of Arguments:

This may occur when you do not place double quotes around comma separated lists.

CONCLUSION

Concluding Remarks

The PS Promotion and Deployment Tool is a set of pre-built modules intended to provide a turn-key experience for promoting CIS resources from one CIS instance to another. The user only requires system administration skills to operate and support. The code is transparent to operations engineers resulting in better supportability. It is easy for users to swap in different implementations of a module using the Spring framework and configuration files.

How you can help!

Build a module and donate the code back to Composite Professional Services for the advancement of the "***PS Promotion and Deployment Tool***".

ABOUT COMPOSITE SOFTWARE

Composite Software, Inc. ® is the only company that focuses solely on data virtualization.

Global organizations faced with disparate, complex data environments, including ten of the top 20 banks, six of the top ten pharmaceutical companies, four of the top five energy firms, major media and technology organizations as well as government agencies, have chosen Composite's proven data virtualization platform to fulfill critical information needs, faster with fewer resources.

Scaling from project to enterprise, Composite's middleware enables data federation, data warehouse extension, enterprise data sharing, real-time and cloud computing data integration.

Founded in 2002, Composite Software is a privately held, venture-funded corporation based in Silicon Valley. For more information, please visit www.compositesw.com.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **www.cisco.com/go/offices.**

Printed in USA CXX-XXXXXX-XX 10/11