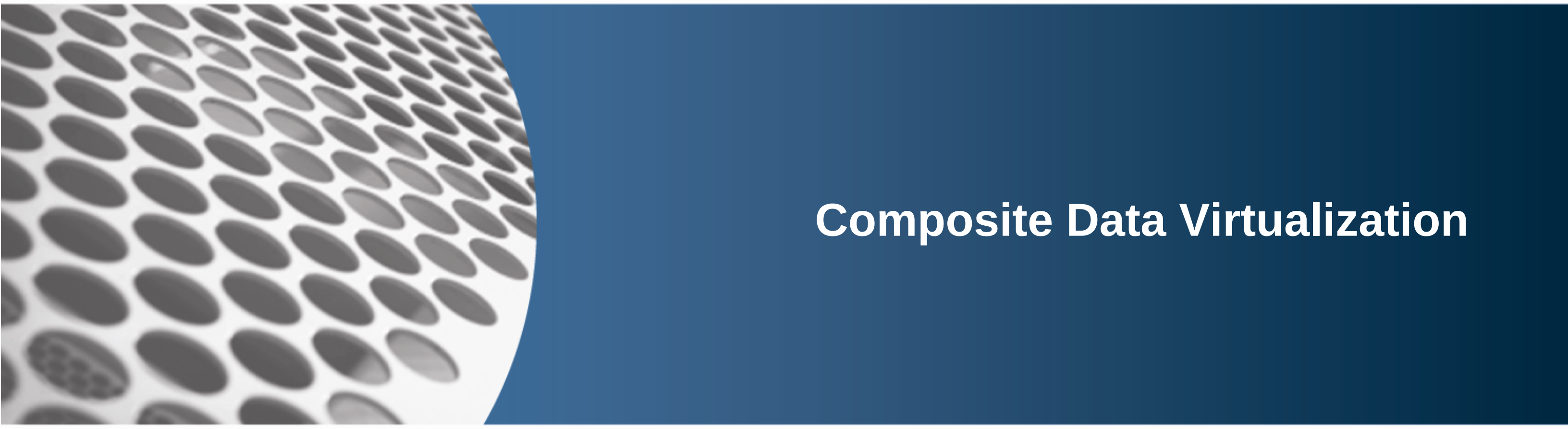
WHITE PAPER

COMPOSITE SOFTWARE



Composite Data Virtualization

Composite PS Promotion and Deployment Tool

Installation Guide

Composite Professional Services

February 2014

Composite Data Virtualization

Composite Software is now part of Cisco

TABLE OF CONTENTS

DOCUMENT CONTROL

Version History

Version	Date	Author	Description
1.0	07/18/2011	Mike Tinius	Initial revision
1.0.1	8/1/2011	Mike Tinius	Revisions due to Architecture changes.
1.2	7/11/2012	Mike Tinius	Added info for drive substitution and network drive mapping.
1.3	8/12/2012	Mike Tinius	Added reference to SUBST drive mapping for long file names.
1.4	10/1/2012	Mike Tinius	Added reference to server ping, retry and sleep for deploy.properties
1.5	5/9/2013	Mike Tinius	Separated out user environment variables from ExecutePDTool.bat/.sh to setVars.bat/.sh.
3.0	8/21/2013	Mike Tinius	Update docs to Cisco format.
3.1	1/31/2014	Mike Tinius	Add documentation for HTTPS configuration.
3.2	2/18/2014	Mike Tinius	Prepare docs for open source.

Related Documents

Document	File Name	Author
Composite PS Promotion and Deployment Tool User's Guide	Composite PS Promotion and Deployment Tool User's Guide v1.0.pdf	Mike Tinius
LabPD-DeployTool-v1.0	LabPD-DeployTool-v1.0.pdf	Mike Tinius
PS Promotion and Deployment Tool v1.1	PS Promotion and Deployment Tool - v1.1.ppt	Mike Tinius
Composite PS Promotion and Deployment Tool Module - Archive	Composite PS Promotion and Deployment Tool Module - Archive.pdf	Mike Tinius
Composite PS Promotion and Deployment Tool Module - DataSource	Composite PS Promotion and Deployment Tool Module - DataSource.pdf	Mike Tinius
Composite PS Promotion and Deployment Tool Module - Group	Composite PS Promotion and Deployment Tool Module - Group.pdf	Mike Tinius
Composite PS Promotion and Deployment Tool Module - Privilege	Composite PS Promotion and Deployment Tool Module - Privilege.pdf	Mike Tinius
Composite PS Promotion and Deployment Tool Module - Rebind	Composite PS Promotion and Deployment Tool Module - Rebind.pdf	Jerry Joplin
Composite PS Promotion and Deployment Tool Module - Regression	Composite PS Promotion and Deployment Tool Module - Regression.pdf	*Sergei Sternin*
Composite PS Promotion and Deployment Tool Module - Resource Cache	Composite PS Promotion and Deployment Tool Module - Resource Cache.pdf	Mike Tinius
Composite PS Promotion and Deployment Tool Module - Resource	Composite PS Promotion and Deployment Tool Module - Resource.pdf	Mike Tinius
Composite PS Promotion and Deployment Tool Module - Server Attribute	Composite PS Promotion and Deployment Tool Module - Server Attribute.pdf	Mike Tinius
Composite PS Promotion and Deployment Tool Module - Server Manager	Composite PS Promotion and Deployment Tool Module - Server Manager.pdf	Gordon Rose
Composite PS Promotion and Deployment Tool Module - Trigger	Composite PS Promotion and Deployment Tool Module - Trigger.pdf	Kevin O'Brien
Composite PS Promotion and Deployment Tool	Composite PS Promotion and Deployment Tool	Mike Tinius

Module - User	Module - User.pdf	
Composite PS Promotion and Deployment Tool Module - Version Control System.pdf	Composite PS Promotion and Deployment Tool Module - Version Control System.pdf	Mike Tinius
Composite PS Promotion and Deployment Developer’s Guide – Field Edition	Composite PS Promotion and Deployment Tool Developer's Guide - Field Edition.docx	Gordon Rose

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 this document is to provide guidance on how to install the Composite "***PS Promotion and Deployment Tool***". Additionally, this document describes what is found in the distribution for both Command line and Ant deployment.

Upon completion of the installation, please refer to the following documentation:

For Users performing promotion and deployment of CIS resources:

1. **User** – Composite PS Promotion and Deployment Tool User's Guide v1.0.pdf
2. **Training** – LabPD-DeployTool.pdf
3. **Modules –** Modularized functionality within the Promotion and Deployment Tool
    - Composite PS Promotion and Deployment Tool Module - Archive.pdf
    - Composite PS Promotion and Deployment Tool Module - DataSource.pdf
    - Composite PS Promotion and Deployment Tool Module - Group.pdf
    - Composite PS Promotion and Deployment Tool Module - Privilege.pdf
    - Composite PS Promotion and Deployment Tool Module - Rebind.pdf
    - Composite PS Promotion and Deployment Tool Module - Regression.pdf
    - Composite PS Promotion and Deployment Tool Module - Resource Cache.pdf
    - Composite PS Promotion and Deployment Tool Module - Resource.pdf
    - Composite PS Promotion and Deployment Tool Module - Server Attribute.pdf
    - Composite PS Promotion and Deployment Tool Module - Server Manager.pdf
    - Composite PS Promotion and Deployment Tool Module - Trigger.pdf
    - Composite PS Promotion and Deployment Tool Module - User.pdf
    - Composite PS Promotion and Deployment Tool Module - Version Control System.pdf

For Developers building new modules to snap into the tool:

1. **Development** – Composite PS Promotion and Deployment Tool Developer's Guide - Field Edition - v1.0.pdf
2. **Training –** LabPD-DeployTool.pdf

Audience

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

- **Operations personnel –** provides guidance on how to execute promotion scripts.
- **Architects** – provides guidance on how CIS fits in with the version control and the deployment infrastructure.
- **Developers** – provides guidance on how to develop new Modules of functionality.

OS Platforms Supported

Windows Platforms: Windows XP, Windows 7
UNIX Platforms: Linux 5.5

> Note: Porting to other operating systems that CIS runs on are available upon request

Java:

> JRE 1.6 for command-line deployment
> JDK 1.6 for Ant deployment

Composite Information Server Versions Supported

Composite Information Server Versions: CIS 6.1, and CIS 6.2.

Version Control Systems Supported

Version Control Systems (VCS) supported out of the box:

- Subversion 1.6 or higher
- Perforce 2010.2 or higher
- Concurrent Versions Systems (CVS) 2.0.51d or higher
- Team Foundation Server (TFS) 2010 – (TFS) 2012

DISTRIBUTION

Combined Command-Line and Ant Distribution

The distribution file for Command Line and Ant deployment is PDTool.zip.

PDTool Contents

1. **bin** – contains the shell and batch scripts for execution.

2. **dist –** contains the PDTool distribution jar file with the necessary java classes for executing the deployment.

3. **docs –** contains documentation.

4. **ext/ant** – contains a distribution of the ant executable files such that ant is not required to be installed on the deployment server.

5. **lib** – contains libraries referenced by the java classes.

6. **resources/**

   6.1. **ant** – contains the ant build files for orchestration of a deployment scenario. A deployment scenario is a sequence of actions or tasks that get executed.

   6.2. **config** – contains the deployment tool configuration files for the spring and logging frameworks as well as deploy.properties for PDTool configuration.

   6.3. **modules** – contains the property files for CIS server instances and each Module XML property file.

   6.4. **plans** – contains the deployment plan files for command-line orchestration of a deployment scenario. A deployment scenario is a sequence of actions or tasks that get executed.

   6.5. **schema** – contains the XML Schema definition “PDToolModules.xsd” for all resource module XML property files.

INSTALLATION

Combined Command Line and Ant Script Installation

Installation of the command line and Ant scripts is straightforward as it is nothing more than a zip file.

System Requirements

The following system requirements must be met for executing Windows or UNIX scripts.

1. **Java 6**

   1.1. **Command-Line** - JRE 1.6 is required to be present on the system.

   1.2. **Ant** - JDK 1.6 is required for Ant Deployment and must be present on the system.

2. **Read/Write Access –** The script must have read/write access to the file system where PDTool is installed. The location of the VCS Workspace must have read/write access by the user. Log files will be written as well.

3. **UNIX (Bash) –** Scripts on UNIX require access to /bin/bash

   3.1. **dos2unix** – required to be installed and accessible in the path

Installation Overview

1. **Select a Project Folder**

2. **Copy or FTP the PDTool.zip**

3. **Unzip PDTool.zip**

4. **Configure** UNIX permissions and property files

5. **Configure ExecutePDTool Script Environment Variable**

6. **Configure deploy.properties file**

7. **Configure log4j properties files**

8. **Configure PD Tool with version control (optional)**

Installation and Configuration Details

1. **Project Folder –** Select a project folder preferably with no spaces.

   1.1. Windows – e.g. C:\dev\deploy

   1.2. UNIX - e.g. /opt/Deploy

2. **FTP or Copy –** FTP or Copy the PDTool.zip to the project folder

3. **Unzip** – Unzip PDTool.zip to the project folder you selected in step 1.

4. **Configure scripts**

   4.1. Windows – not applicable

   4.2. UNIX - Configure permissions and dos2unix using **configureScripts.sh**. This script will iterate through a list of folders provided in the script and do the following

   - Set execution mode on all .sh files [chmod 744 filename.sh]
   - Set permissions based on the user and group: [chown user, chgrp group]
   - Remove windows linefeeds on all .sh and property files [dos2unix filename]

   Instructions:

   4.3. Starting in your PDTool folder, cd bin

   4.4. chmod 744 configureScripts.sh

   4.5. dos2unix configureScripts.sh

   4.6. ./configureScripts.sh <user> <group>

   4.6.1. e.g. ./configureScripts.sh composite composite

5. **Configure ExecutePDTool Script Environment Variable**

   5.1. Windows – Modify **setVars.bat**

   5.1.1. Address "path too long issues" using windows substitution command.

   5.1.1.1. SUBST primer

   5.1.1.1.1. List drives: type SUBST

   5.1.1.1.2. Delete an existing substitution: SUBST /D [drive:]

   5.1.1.1.3. What if PDTool Executes and you get the message: Drive already SUBSTed?

   5.1.1.1.3.1. Either change the drive letter starting with step 5.1.1.2 or delete the substitution using SUBST /D [drive:]

   5.1.1.2. Edit SUBSTITUTE_DRIVE variable and select a drive letter variable that is not being used. The default is "v:" for PDToolStudio and "p:" for PDTool.

   5.1.1.3. All other variables should not be changed.

   5.1.1.4. Note: substitution is set by default. To disable the use of substitution, simply set the variable to nothing: [set SUBSTITUTE_DRIVE=]

5.1.2. To Map a network drive set the PROJECT_DIR to the computer name and path of PDTool.

5.1.2.1. PROJECT_DIR=\\<computer-name>\<path-to-PDTool>

5.2. UNIX - Modify **setVars.sh**

5.3. For Both Windows and UNIX:

5.3.1. Edit JAVA_HOME variable to point to either a JRE 1.6 when using Command-line deployment or JDK 1.6 home when using Ant deployment.

5.3.2. Edit MIN_MEMORY and set the minimum java heap memory to use. The default is “-Xms256m”.

5.3.3. Edit MAX_MEMORY and set the maximum java heap memory to use. The default is “-Xmx512m”.

5.4. Save and exit

6. **Configure deploy.properties**

6.1. Note: If not using a Version Control System (VCS) for deployment, the default values should be acceptable for deploy.properties.

Instructions for modifying deploy.properties

6.2. This step is applicable for both UNIX and Windows

6.3. This step is applicable for both Command-Line and Ant deployment.

6.4. **General Instructions for deploy.properties**

6.4.1. **PROJECT_HOME** is automatically set upon invocation of the ExecutePDTool script based on PDTool/bin relative location

6.4.2. **Edit** PDTool/resources/config/**deploy.properties** using a text editor.

6.4.3. Always use forward slashes for both Windows and Unix paths and URLs.

6.4.4. Variables may use $ or % notations. It is not operating system specific.

6.4.5. Variables may resolve to this property file, Java Environment (-DVAR=val) or the System Environment variables

6.4.6. Surround variables with two $ or two % when concatenating strings (e.g. VCS_TYPE_cisVcsTemp)

6.5. **Guidance**

6.5.1. If not using VCS deployment, you should be able to take all of the defaults.

6.5.2. If using VCS deployment then pay close attention to section 6.7.

6.6. **Customer-Defined** Environment Variables [Optionally set]

6.6.1. Set environment variables as needed for use within the PDTool.dp orchestration file. The idea with these properties is to use them within the property orchestration file as variables. An Example is shown below:

```
#=====================================================================
# Customer-defined Environment Variables [Optional]
#   Note: May be used in either the orchestration property file.
#   This section may not be used with ANT.
#======================================================================
CARFILE=testout.car
#
# Provides an easy way to customize which server to the deployment
orchestration property file will connect to
SERVERID=localhost
#
# Server environment for the LabPD-Deploy
LAB_SERVERID=labhost
#
```

6.7. **Behavior** Environment Variables [Optionally modified]

6.7.1. It is recommended that these properties be left as defaults unless more debug information is required.

```
#=====================================================================
# Behavior Environment Variables [default values set]
#=====================================================================
# Suppress [true|false] printing PDTool orchestration comments to the log
SUPPRESS_COMMENTS=true
#
# DEBUG=true|false :: Turn on when debugging this script
# Debug Level 1: Debug PDTool script only
DEBUG1=false
# Debug Level 2: Debug ExecuteAction, ExecuteVCS
DEBUG2=false
# Debug Level 3: Debug 3rd level scripts invoked from ExecuteAction and
ExecuteVCS
DEBUG3=false
```

```
# Diffmerger Verbose allows the VCS Diffmerger process to output more
information when set to true [Default=true]
DIFFMERGER_VERBOSE=true
#
# Used when parsing property file and processing the moduleId list
allResourcesIndicator=*
exculdeResourcesIndiator=-
#
# userOptionThreshold - The threshold of the number of users where it is more
efficient to retrieve all users at once (option 1).
# If the number of users to be processed in the UserModule XML file exceeds
the threshold then use option 1.
# Retrieve the entire CIS user list in one invocation. This options requires
storing all CIS user and domain in memory.
# If there are 1000's of users, this could take a lot of memory.
# To use this option, determine how many users are in your composite domain
and set the threshold to that value or greater.
# vs.
# calling the API to retrieve a user for each user found in the UserModule.xml
(option 2)
# If the number of users to be processed in the UserModule XML file is less
than the threshold then use option 2.
# Retrieve the user info on each invocation of a user found in the
UserModule.xml.
# This requires a web service invocation to the CIS server for each user to be
processed.  A threshold of 0 will cause the invocation of the user API one at
a time.
userOptionThreshold=0
#
# Listing of DataSourceModule generic attributes that are not updateable
DataSourceModule_NonUpdateableAttributes=url
#
# Listing of ServerAttributeModul generic attributes that are not updateable
ServerAttributeModule_NonUpdateableAttributes=
#
# Listing of DomainModule generic attributes that are not updateable
DomainModule_NonUpdateableAttributes=
#
# This provides an externalized mechanism to teach PD Tool about new Resource
Types and how they are associated with the basic VCS Resource Types.  The
basic VCS Resource Types include:
#    FOLDER, definitions, link, procedure, table, tree, trigger
#
```

```
# Each Studio Resource contains an info tab with a resource path and a display
type.  Use the Resource path in the info tab as input into the following
Studio Web Service API to discover the CIS Resource Type.

#   /services/webservices/system/admin/resource/operations/getResource()

#

# The CIS Resource Type is mapped to one of the basic VCS Resource Types
provided above.  Finally, provide the name value pair in the form of "VCS
Resource Type=Studio Display Resource Type".  Create a comma separate list of
these name=value pairs.  For example:

# folder=Data Source,folder=Composite Database,procedure=Basic Transformation

#

VCSModule_ExternalVcsResourceTypeList=

#

# CIS_PING_SERVER:  Allows the user to control whether the server performs a
ping on CIS prior to executing the actual command.

# The default is true if this variable is not set or does not exist.  This
will override all settings.

CIS_PING_SERVER=true

#

# CIS_CONNECT_RETRY: Allows the user to set the number of retries to connect
to CIS before throwing an error.

# The default is 1 if this variable is not set or does not exist.

CIS_CONNECT_RETRY=3

#

# CIS_CONNECT_RETRY_SLEEP: Number of milliseconds to sleep on connection retry

CIS_CONNECT_RETRY_SLEEP_MILLIS=5000

#---------------------------------------------------------------------
```

6.8. **Version Control System (VCS)** Environment Variables [Optionally set]

6.8.1. Only set when using VCS deployment. This entire section is detailed out in the document "**Composite PS Promotion and Deployment Tool Module - Version Control System.pdf**"

```
#=====================================================================

# VCS Environment Variables [Optional]

#=====================================================================

...
```

6.9. **VCS-Specific** Environment Variables [Optionally set]

6.9.1. The following three sections [Subversion, Perforce, CVS] are only set when using VCS deployment. This entire section is detailed out in the document "**Composite PS Promotion and Deployment Tool Module - Version Control System.pdf**"

```
#=====================================================================
#### [SUBVERSION] USER MODIFIES [OPTIONAL] #####
# Subversion [svn] specific environment variables are set here
#=====================================================================
...
#=====================================================================
#### [PERFORCE] USER MODIFIES [OPTIONAL] #####
# Perforce [p4] specific environment variables are set here
#=====================================================================
...
#=====================================================================
#### [CVS] USER MODIFIES [OPTIONAL] #####
# Concurrent Versions System [cvs] specific environment variables are set here
#=====================================================================#
...
```

6.10. DeployTool System Environment Variables [Do Not Modify]

6.10.1. This section defaults to preset values based on the location of PROJECT_HOME. The variable PROJECT_HOME is automatically derived upon execution of the ExecutePDTool script. These values should not be modified.

```
#------------------------------------------------------------------------------
-
#### DO NOT MODIFY #####
#==============================================================================
=
# DeployTool System Environment Variables
#==============================================================================
=
# PDTool configuration directory locations
# Note:  Relative paths outside of the project home are permitted as shown
here:  $PROJECT_HOME/../modules.  This path gets resolved to a sibling
directory to $PROJECT_HOME.
MODULE_HOME=$PROJECT_HOME/resources/modules
SUMMARY_LOG=$PROJECT_HOME/logs/summary.log
#
# SCHEMA_LOCATION - Provides a copy of the XML Schema which is used for
validation purposes.
# For command line deployment, use of "../resources/schema/PDToolModules.xsd"
will work.
SCHEMA_LOCATION=$PROJECT_HOME/resources/schema/PDToolModules.xsd
#
```

```
# Comma separated list of Resource Sub Types that are not considered
rebindable
nonRebindableResourceSubTypeList=DATABASE_TABLE
#---------------------------------------------------------------------------------------
-
```

7. **Configure log4j.properties**

7.1. Note: The default values should be acceptable for log4j.properties.

Instructions for modifying log4j.properties

7.2. This step is applicable for both UNIX and Windows

7.3. This step is applicable for both Command-Line and Ant deployment.

7.4. **Edit** PDTool/resources/config/**log4j.properties** using a text editor.

7.5. It is up to the user to determine what levels of logging are required. This rule is at the heart of log4j. It assumes that levels are ordered. For the standard levels in order, we have DEBUG < INFO < WARN < ERROR < FATAL.

7.6. The following describes the “app.log” settings. The app.log is used for output of the invoked Java Actions.

```
log4j.rootCategory=WARN,stdout,FileAppender


log4j.appender.stdout=org.apache.log4j.ConsoleAppender
log4j.appender.stdout.layout=org.apache.log4j.PatternLayout
log4j.appender.stdout.layout.ConversionPattern=%d{ISO8601} %t %p [%c] - <%m>%n
log4j.appender.FileAppender=org.apache.log4j.RollingFileAppender
# Forward slashes (/) must be used when defining log file path
log4j.appender.FileAppender.File=../logs/app.log
log4j.appender.FileAppender.MaxFileSize=1MB
log4j.appender.FileAppender.MaxBackupIndex=1
log4j.appender.FileAppender.layout=org.apache.log4j.PatternLayout
log4j.appender.FileAppender.layout.ConversionPattern=%d{ISO8601} %t %p [%c] - <%m>%n
log4j.appender.FileAppender.Threshold=DEBUG
```

7.7. The following describes logging general behavior settings.

```
# This rule is at the heart of log4j. It assumes that levels are ordered.
# For the standard levels in order, we have DEBUG < INFO < WARN < ERROR < FATAL.
# Set to DEBUG if there are script issues and you want to get more output information
# PDTool Command-line Orchestration Debugging
log4j.logger.com.cisco.dvbu.ps.deploytool.CisDeployTool=INFO
# PDTool Module Debugging for Command-line and Ant (Applies to *ALL* Modules)
```

```
log4j.logger.com.cisco.dvbu.ps.deploytool=INFO
# Common Utility Framework Debugging includes:
# [CommonUtils, PropertyManager, PropertyUtil, ScriptExecutor, XMLUtils, JdbcConnector]
log4j.logger.com.cisco.dvbu.ps.common.util=INFO
# VCS Diffmerger and Archive Services Debugging
log4j.logger.com.cisco.dvbu.cmdline=INFO
# Composite Archive [INFO, DEBUG, WARN]
#   INFO: required for any of the print options such as printinfo
log4j.logger.com.compositesw.cmdline.archive=INFO
# Spring Framework Debugging
log4j.logger.org.springframework=WARN
```

Note: This should be left at ERROR

```
# Note: This should be left at ERROR
log4j.logger.com.cisco.dvbu.ps.common.scriptutil=ERROR
```

8. Configure PD Tool with version control (optional)

8.1. This entire section is detailed out in the document “**Composite PS Promotion and Deployment Tool Module - Version Control System.pdf”**

CONFIGURE PDTOOL OVER SSL (HTTPS)

How to configure PDTool over SSL

This section discusses the procedure for configuring both PDTool 6.2 and the target CIS server. Only PDTool 6.2 supports the ability for PDTool to connect to CIS over SSL using the https protocol. The minimum requirement for CIS is to be patched to CIS 6.2.4.00.46.

Configuring PDTool Over SSL

The following steps outline what a deployment administrator or developer should do to modify PDTool and CIS for communicating over SSL using HTTPS.

1. **PDTool Modifications for Windows**

1.1. Edit <PDTOOOL_HOME>\bin\setVars.bat

1.2. Find the section labeled: PDTool Over SSL (https)

1.3. The default setting is for PDTool to point to the weak TustStore which ships with PDTool 6.2 and CIS.

1.4. **Important**: If you your CIS Server has the Strong Encryption Pack installed, you must configure PDTool to use the Strong Encryption Pack or you may see this error:

com.cisco.dvbu.ps.deploytool.DeployManagerUtil.main(DeployManagerUtil.java:103) Caused by: javax.xml.ws.WebServiceException: **Failed to access the WSDL at: https://localhost:9402/services/system/admin?wsdl.** It failed with: Got sun.security.validator.ValidatorException: **PKIX path building failed**: sun.security.provider.certpath.SunCertPathBuilderException: **unable to find valid certification path to requsted target while opening stream from https://localhost:9402/services/system/admin?wsdl**.

1.5. To point to the strong encryption pack:

1.5.1. Acquire the strong encryption pack from Cisco Support.

1.5.2. Determine which option best identifies your scenario:

1.5.3. Option 1: PDTool is installed on a server with CIS Server present.

1.5.3.1. Unzip the Strong Encryption Pack into <CIS_HOME>

1.5.3.2. Modify the CERT_ARGS path to point to cis_server_truststore_strong.jks

1.5.4. Option 2: PDTool is installed on a client with CIS Studio present.

1.5.4.1. Unzip the Strong Encryption Pack into <CIS_HOME>

1.5.4.2. Modify the CERT_ARGS path to point to cis_studio_truststore_strong.jks

1.5.5. Option 3: PDTool is installed stand-alone with no CIS Server or Studio present on the machine.

1.5.5.1. Unzip the Strong Encryption to any folder.

1.5.5.1.1. E.g. C:\Composite\StrongEncryption\conf\studio\security\cis_studio_truststore_strong.jks

1.5.5.2. Modify the CERT_ARGS path to point to cis_studio_truststore_strong.jks

1.5.5.3. SET CERT_ARGS="-Djavax.net.ssl.trustStore=C:\Composite\StrongEncryption\conf\studio\security\cis_studio_truststore_strong.jks" -Djavax.net.ssl.trustStorePassword=changeit

2. **PDTool Modifications for Linux**

2.1. Edit <PDTOOOL_HOME>/bin/setVars.sh

2.2. Find the section labeled: PDTool Over SSL (https)

2.3. The default setting is for PDTool to point to the weak TustStore which ships with PDTool 6.2 and CIS.

2.4. **Important**: If you your CIS Server has the Strong Encryption Pack installed, you must configure PDTool to use the Strong Encryption Pack or you may see this error:

com.cisco.dvbu.ps.deploytool.DeployManagerUtil.main(DeployManagerUtil.java:103) Caused by: javax.xml.ws.WebServiceException: **Failed to access the WSDL at: https://localhost:9402/services/system/admin?wsdl.** It failed with: Got sun.security.validator.ValidatorException: **PKIX path building failed**: sun.security.provider.certpath.SunCertPathBuilderException: **unable to find valid certification path to requsted target while opening stream from https://localhost:9402/services/system/admin?wsdl**.

2.5. To point to the strong encryption pack:

2.5.1. Acquire the strong encryption pack from Cisco Support.

2.5.2. Determine which option best identifies your scenario:

2.5.3. Option 1: PDTool is installed on a server with CIS Server present.

2.5.3.1. Unzip the Strong Encryption Pack into <CIS_HOME>

2.5.3.2. Modify the CERT_ARGS path to point to cis_server_truststore_strong.jks

2.5.4. Option 2: PDTool is installed on a client with CIS Studio present.

2.5.4.1. Unzip the Strong Encryption Pack into <CIS_HOME>

2.5.4.2. Modify the CERT_ARGS path to point to cis_studio_truststore_strong.jks

2.5.5. Option 3: PDTool is installed stand-alone with no CIS Server or Studio present on the machine.

2.5.5.1. Unzip the Strong Encryption to any folder.

2.5.5.1.1. E.g. /opt/Composite/StrongEncryption/conf/studio/security/cis_studio_truststore_strong.jks

2.5.5.2. Modify the CERT_ARGS path to point to cis_studio_truststore_strong.jks

2.5.5.3. export CERT_ARGS="-Djavax.net.ssl.trustStore=/opt/Composite/StrongEncryption/conf/studio/security/cis_studio_truststore_strong.jks -Djavax.net.ssl.trustStorePassword=changeit"

3. CIS Modifications

3.1. Disable HTTP (if it hasn't been done already) in the Configuration Panel under "Composite Server" → "Web Services Interface" → "Communications" → "HTTP" → "Disable HTTP (On server restart)" → Check “true” to disable.

3.2. If using CIS at version 6.2.4.00.45 or lower:

3.2.1. Shut down CIS.

3.2.2. Update to the latest CIS 6.2 patch.

3.2.3. Restart CIS.

3.3. If already at 6.2.4.00.46 or higher and patching is not desired:

3.3.1. If CIS has not been restarted since HTTP was disabled, restart CIS so the new setting will take effect.

3.3.2. Run the following command from a command prompt in the <CIS_HOME> folder (update the base port from 9400 to your instance's base port if necessary. Do NOT specify the HTTPS port, 9402; the -encrypt flag tells server_util to do this for you):

3.3.3. Windows: bin\server_util.bat -server localhost -port 9400 -user admin -password <admin_pw> -resetNamespace -encrypt

3.3.4. Linux: . ./bin/server_util.sh -server localhost -port 9400 -user admin -password <admin_pw> -resetNamespace -encrypt

4. **PDTool Configuration:**

4.1. For the Archive module, each module entry where HTTPS needs to be used requires the <encrypt> flag to be turned on in the ArchiveModule.xml file.

4.1.1. See /resources/modules/ArchiveModule.xml

4.2. For all other modules, each server in servers.xml that will be using HTTPS will need to have the <useHttps> flag turned on.

4.2.1. See /resources/modules/servers.xml

5. Known Issues

5.1. The deploy.properties parameter CIS_PING_SERVER must be set to “false” or an exception will be thrown when connecting to CIS over SSL (https).

```
# CIS_PING_SERVER:  Allows the user to control whether the server performs a ping on CIS prior to executing the actual command.

#           The default is true if this variable is not set or does not exist.  This will override all settings.

CIS_PING_SERVER=false
```

5.2. Executing Composite Web Services over HTTP/S

5.2.1. The following error occurs when trying to access a new Composite web service over HTTPS and the correct security policy is not set.

Error: 500 Internal Server Error
Description: The requested resource must not be accessed using the HTTP/S protocol.

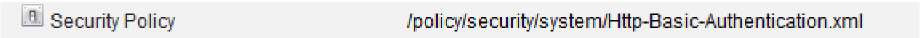
<u>Example of an error using Regression Module to execute the web service:</u>

The regression input file encrypt=false has been overridden by useHttps=true for path=/soap11/testWebService00_NoParams_bare

2014-02-03 20:59:44,050 main ERROR [com.cisco.dvbu.ps.deploytool.dao.jdbcapi.RegressionPubTestJdbcDAOImpl] -

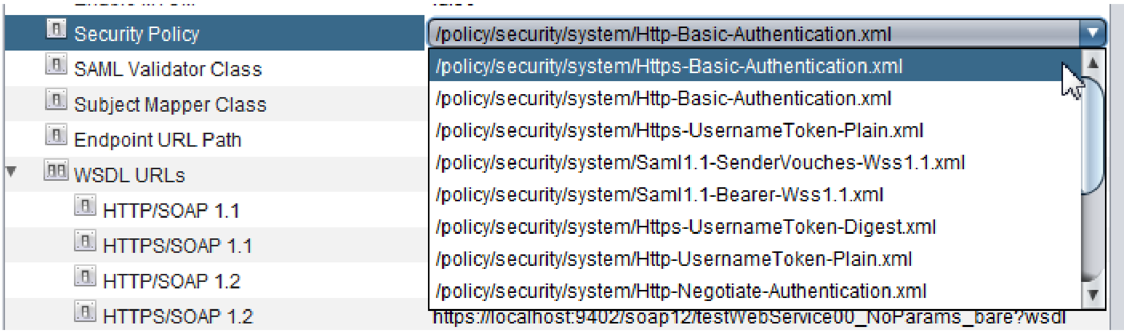
<executeWs(): Server returned HTTP response code: 401 for URL: https://localhost:9402/soap11/testWebService00_NoParams_bare DETAILED_MESSAGE=[executeWs(): <?xml version="1.0" encoding="ISO-8859-1"?> <html> <head/> <body> <div style="font-family: sans-serif; color: #990000; margin-top: 5px; margin-bottom: 5px; text-align: center">COMPOSITE INFORMATION SERVER <hr style="border-style: groove;"/> </div> <div style="font-family: sans-serif;"> <b>Error: </b>**401 Unauthorized** </div> <div style="font-family: sans-serif;"> <b>**Description:** </b>**The requested resource must not be accessed using the HTTP/S protocol.** </div> </body> </html>]>

5.2.2. **Issue**: The security policy is Http-Basic-Authentication



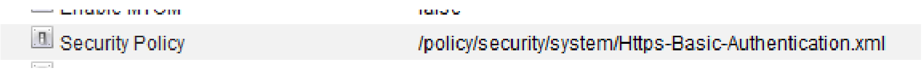
Security Policy	/policy/security/system/Http-Basic-Authentication.xml

5.2.3. **Resolution**: Change the security policy to Https-Basic-Authentication



Security Policy	/policy/security/system/Http-Basic-Authentication.xml
SAML Validator Class	
Subject Mapper Class	
Endpoint URL Path	
WSDL URLs	
HTTP/SOAP 1.1	
HTTPS/SOAP 1.1	
HTTP/SOAP 1.2	
HTTPS/SOAP 1.2	https://localhost:9402/soap12/testWebService00_NoParams_bare?wsdl

/policy/security/system/Https-Basic-Authentication.xml
/policy/security/system/Http-Basic-Authentication.xml
/policy/security/system/Https-UsernameToken-Plain.xml
/policy/security/system/Saml1.1-SenderVouches-Wss1.1.xml
/policy/security/system/Saml1.1-Bearer-Wss1.1.xml
/policy/security/system/Https-UsernameToken-Digest.xml
/policy/security/system/Http-UsernameToken-Plain.xml
/policy/security/system/Http-Negotiate-Authentication.xml



Security Policy	/policy/security/system/Https-Basic-Authentication.xml

CONFIGURE PDTOOL HTTP PROXY

How to configure PDTool HTTP Proxy

This section discusses the procedure for configuring an HTTP proxy for PDTool 6.2.

Configuring the HTTP Proxy for PDTool

The following steps outline what a deployment administrator or developer should do to modify PDTool to use an HTTP Proxy.

1. **PDTool Modifications for Windows**

   1.1. Edit <PDTOOOL_HOME>\bin\setVars.bat

   1.2. Find the section labeled: PDTool Proxy Settings

   1.3. Set the HTTP proxy settings for PDTool. Determine if a proxyUser and proxyPassword is required and set accordingly. The following line provides an example:

   ```
   set HTTP_PROXY=-DproxySet=true -Dhttp.proxyHost=wwwproxy.mydomain.com -
   Dhttp.proxyPort=80 -Dhttp.proxyUser=mydomain\myuser -Dhttp.proxyPassword=mypassword
   ```

2. **PDTool Modifications for Linux**

   2.1. Edit <PDTOOOL_HOME>/bin/setVars.sh

   2.2. Find the section labeled: PDTool Proxy Settings

   2.3. Set the HTTP proxy settings for PDTool. Determine if a proxyUser and proxyPassword is required and set accordingly. The following line provides an example:

   ```
   export HTTP_PROXY="-DproxySet=true -Dhttp.proxyHost=wwwproxy.mydomain.com -
   Dhttp.proxyPort=80 -Dhttp.proxyUser=mydomain\myuser -Dhttp.proxyPassword=mypassword"
   ```

UPGRADING PDTOOL

How to upgrade an instance of PDTool

This section discusses the procedure for upgrading an instance of PDTool to a new one.

Upgrade an existing install

The following steps outline what a deployment administrator or developer should do to upgrade PDTool from one version to another. Regarding the instructions below, wherever PDTool62 or PDTool-6.2 is referenced, this may be interchanged with PDTool61 and PDTool-6.1 when working with a PDTool 6.1 or lower installation. For ease of documentation, 6.2 will be used here.

3. **Rename old PDTool directory (previous release)**

3.1. Rename the original PDTool or PDTool62 directory to PDTool62-YYYY-MM-DD where YYYY-MM-DD represents the actual release of the previous version as found in PDTool-6.2-YYYY-MM-DD.r1.txt.

4. **Install new version of PDTool**

4.1. Copy the PDTool zip file with the pattern "PDTool-6.2-YYYY-MM-DD.r1.zip" to the root folder where you want to unzip.

4.1.1. OPTION 1:

Install the new version by unzipping the PDTool zip file using "WinZip" or "7-Zip"

If you using WinZip or 7-Zip then select the option to "Extract Here"

Another option is to leave the zip file where it is and simply browse to the root folder where you want to create the "PDTool62" sub-folder.

4.1.2. OPTION 2:

Install the new version by unzipping the PDTool zip file using "Extract All"

If using Windows "Extract All", make sure that you remove the folder name at the end corrensponding with this pattern: \PDTool-6.2-YYYY-MM-DD.r1

The Extract All will unzip into the root of the directory where the zip file lives and create the sub-folder "PDTool62".

Another option is to leave the zip file where it is and simply browse to the root folder where you want to create the "PDTool62" sub-folder.

5. **Upgrade Module XML Files**

5.1. Save the new PDTool62/resources/modules/*.xml to a sub-folder so these files are not overwritten

5.2. Copy PDTool62-YYYY-MM-DD/resources/modules/*.xml PDTool62/resources/modules

5.3. Edit XML files as needed or as directed by the release notes to take advantage of new functionality

6. **Upgrade Deployment Plan Files**

6.1. Save the new PDTool62/resources/plans/*.dp to a sub-folder so these files are not overwritten

6.2. Copy PDTool62-YYYY-MM-DD/resources/plans/*.dp PDTool62/resources/plans

6.3. Edit .dp files as needed or as directed by the release notes to take advantage of new functionality

7. **Upgrade Ant Build Files**

7.1. Save the new PDTool62/resources/ant/*.xml to a sub-folder so these files are not overwritten

7.2. Copy PDTool62-YYYY-MM-DD/resources/ant/*.xml PDTool62/resources/ant

7.3. Edit .xml files as needed or as directed by the release notes to take advantage of new functionality

8. **Upgrade Configuration Property Files**

8.1. Save the new PDTool62/resources/config/*.* to a sbu-folder so these files are not overwritten

8.2. Copy PDTool62-YYYY-MM-DD/config/*.properties PDTool62/config

8.3. Copy PDTool62-YYYY-MM-DD/config/*.xml PDTool62/config

8.4. Edit .properties files as needed or as directed by the release notes to take advantage of new functionality

9. **Upgrade Configuration Property Files**

9.1. Copy any customized batch/shell script files from PDTool62-YYYY-MM-DD/bin to PDTool62/bin

9.2. Review any differences between the old and new setVars.bat.

9.2.1. If no differences, simply copy PDTool62-YYYY-MM-DD/bin/setVars.bat or .sh to PDTool62/bin

9.2.2. If there are differences, then copy your modifications to the same environment variables in the new setVars.bat or .sh. Open both the old and new setVars.bat and copy the environment variable settings as needed.

VERSION CONTROL SYSTEM INSTALLATION

Version Control System (VCS) Installation and Configuration

The PDTool contains a version control module called VCSModule and is used for integrating with version control systems. This is an optional module and not required to be configured if you are not using any version control system. VCS integration with Subversion (svn), Perforce (p4) and Concurrent Versions System (cvs) are provided out-of-the-box. If other version control systems are being used, then the VCS Module will need to be enhanced to support that VCS. Please contact Composite Professional Services for a PS engagement.

All documentation regarding setup and configuration of the VCSModule can be found in PDTool/docs. Please refer to the following documents:

- **Composite PS Promotion and Deployment Tool Module - Version Control System.pdf**

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.

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Printed in USA   CXX-XXXXXX-XX   10/11