PDTool Resource Cache Module User Guide

An Open Source Asset for use with TIBCO® Data Virtualization

|  |  |
| --- | --- |
| **Project Name** | AS Assets PDTool (Promotion and Deployment Tool) |
| **Document Location** | This document is only valid on the day it was printed. The source of the document will be found in the PDTool and PDToolRelease folder (https://github.com/TIBCOSoftware) |
| **Purpose** | User’s Guide |

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Comments** |
| 1.0 | 6/6/2011 | Mike Tinius | Initial revision for Resource Cache User Guide |
| 1.0.1 | 8/1/2011 | Mike Tinius | Revisions due to Architecture changes |
| 3.0 | 8/21/2013 | Mike Tinius | Updated docs to Cisco format |
| 3.1 | 1/31/2014 | Mike Tinius | Added updateResourceCacheEnabled to enable/disable all caches in a starting folder for the Resource Cache Module. |
| 3.2 | 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 |
| 3.3 | 11/17/2014 | Mike Tinius | Update license. |
| 3.4 | 3/4/2015 | Mike Tinius | Updated table of contents to include method and updated docs to Cisco format. |
| 4.0 | 12/14/2017 | Mike Tinius | Initial revision with Tibco |
| 5.0 | 08/27/2020 | Mike Tinius | Updated documentation |
| 5.1 | 10/20/2020 | Mike Tinius | Updated documentation |

Related Documents

|  |  |
| --- | --- |
| **Name** | **Author** |
| PDTool User's Guide.pdf | Mike Tinius |

Supported Versions

|  |  |
| --- | --- |
| **Name** | **Version** |
| TIBCO® Data Virtualization | 7.0.8 or later |

Table of Contents

[1 Introduction 4](#_Toc54121088)

[Purpose 4](#_Toc54121089)

[Audience 4](#_Toc54121090)

[References 4](#_Toc54121091)

[2 Resource Cache Module Definition 5](#_Toc54121092)

[Method Definitions and Signatures 5](#_Toc54121093)

[1. updateResourceCache 5](#_Toc54121094)

[2. clearResourceCache 5](#_Toc54121095)

[3. refreshResourceCache 5](#_Toc54121096)

[4. updateResourceCacheEnabled 6](#_Toc54121097)

[5. generatetResourceCacheXML 6](#_Toc54121098)

[3 Resource Cache Module XML Configuration 9](#_Toc54121099)

[Description of the Module XML 9](#_Toc54121100)

[Attributes of Interest 10](#_Toc54121101)

[Attribute Value Restrictions 11](#_Toc54121102)

[4 How To Execute 15](#_Toc54121103)

[Script Execution 15](#_Toc54121104)

[Ant Execution 16](#_Toc54121105)

[Module ID Usage 18](#_Toc54121106)

[5 PDTool Examples 20](#_Toc54121107)

[Scenario 1 – Generate Resource Cache XML 20](#_Toc54121108)

[Scenario 2 – Clear and Refresh the cache 21](#_Toc54121109)

[Scenario 3 – Update Cache Configuration (Enable/Disable) 22](#_Toc54121110)

[Scenario 4 – Update Cache Configuration (Enable/Disable) for all cached resources in a folder and sub-folders. 22](#_Toc54121111)

[6 Exceptions and Messages 24](#_Toc54121112)

[7 Conclusion 25](#_Toc54121113)

[Concluding Remarks 25](#_Toc54121114)

[How you can help! 25](#_Toc54121115)

1. Introduction

## Purpose

The purpose of the Resource Cache User Guide is to demonstrate how to effectively use the Resource Cache Module for managing cacheable resources. A cacheable resource can be either Data Virtualization (DV) procedures, data source tables or views. Managing a cacheable resource involves being able to update the cached resource parameters, clearing the cache, refreshing the cache and generating the XML property file from existing cached resources. Any changes made using this module will be reflected in DV Studio after refreshing the resources.

## Audience

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

* Architects
* Developers
* Administrators
* Operations personnel

## References

Product references are shown below. Any references to CIS or DV refer to the current TIBCO® Data Virtualization.

* TIBCO® Data Virtualization was formerly known as
  + Cisco Data Virtualization (DV)
  + Composite Information Server (CIS)

1. Resource Cache Module Definition

## Method Definitions and Signatures

### updateResourceCache

Update the resource cache configuration for a procedure, table or view for a given set of resource Ids.

@param serverId - target server id from server XML configuration file

@param resourceIds - list of resource cache Ids (comma separated list of Ids)

@param pathToResourceCacheXML - path to the resource cache module XML configuration file.

@param pathToServersXML - path to the server XML configuration file.

@throws CompositeException

**public** **void** updateResourceCache(String serverId, String resourceIds, String pathToResourceCacheXML, String pathToServersXML) **throws** CompositeException;

### clearResourceCache

Clear the cache for a given set of resource Ids.

@param serverId - target server id from server XML configuration file

@param resourceIds - list of resource cache Ids (comma separated list of Ids)

@param pathToResourceCacheXML - path to the resource cache module XML configuration file.

@param pathToServersXML - path to the server XML configuration file.

@throws CompositeException

**public** **void** clearResourceCache(String serverId, String resourceIds, String pathToResourceCacheXML, String pathToServersXML) **throws** CompositeException;

### refreshResourceCache

Refresh the cache for a given set of resource Ids.

@param serverId - target server id from server XML configuration file

@param resourceIds - list of resource cache Ids (comma separated list of Ids)

@param pathToResourceCacheXML - path to the resource cache module XML configuration file.

@param pathToServersXML - path to the server XML configuration file.

@throws CompositeException

**public** **void** refreshResourceCache(String serverId, String resourceIds, String pathToResourceCacheXML, String pathToServersXML) **throws** CompositeException;

### updateResourceCacheEnabled

Update the resource cache enable flag for a given resource or an entire folder of resources for a given set of resource Ids. If the resource type is a CONTAINER then recursively walk the starting resource path and interrogate resources that are configured for caching and set the enabled flag to either “true” (enabled) or “false” (disabled). If the resource type is anything other than CONTAINER, then only interrogate that resource to see if the cache is configured and set the enabled flag to “true” or “false”.

@param serverId - target server id from server XML configuration file

@param resourceIds - list of resource cache Ids (comma separated list of Ids)

@param pathToResourceCacheXML - path to the resource cache module XML configuration file.

@param pathToServersXML - path to the server XML configuration file. Only the “enabled” element is used. All other elements do not need to be present.

@throws CompositeException

**public** **void** updateResourceCacheEnabled(String serverId, String resourceIds, String pathToResourceCacheXML, String pathToServersXML) **throws** CompositeException;

### generatetResourceCacheXML

Generate an XML property file of all the resource cache configurations for a given starting path and the provided generation options.

@param serverId - target server id from server XML configuration file

@param startPath - starting path for the resources to generate

@param pathToResourceCacheXML - path including name to the resource cache XML which will be generated

@param pathToServersXML - path to the server XML configuration file.

@param options – space or comma separated list of options [CONFIGURED NONCONFIGURED TABLE PROCEDURE].

If left blank, the default is to produce an XML for all tables and procedures whether they are cached configured or not

CONFIGURED - generate XML for cache configured resources

NONCONFIGURED - generate XML for non-configured cache resources

TABLE - generate XML for a data source TABLE or VIEW

PROCEDURE - generate XML for PROCEDURE

@throws CompositeException

**public** **void** generateResourceCacheXML(String serverId, String startPath, String pathToResourceCacheXML, String pathToServersXML, String options) **throws** CompositeException;

The following structure is an example of what is generated:

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

<ns2:ResourceCacheModule xmlns:ns2="http://www.dvbu.cisco.com/ps/deploytool/modules">

<resourceCache>

<id>cache4</id>

<resourcePath>/shared/Cache\_DB/test3</resourcePath>

<resourceType>TABLE</resourceType>

<cacheConfig>

<allOrNothing>true</allOrNothing>

<configured>true</configured>

<enabled>false</enabled>

<incremental>false</incremental>

<storage>

<mode>DATA\_SOURCE\_OTPS</mode>

<bucketMode>MANUAL</bucketMode>

<storageDataSourcePath>/shared/Cache\_DB/Cache\_Repo</storageDataSourcePath>

<storageTargets>

<targetName>result0</targetName>

<path>/shared/Cache\_DB/Cache\_Repo/CIS\_KPI/test0</path>

<type>TABLE</type>

</storageTargets>

<storageTargets>

<targetName>result1</targetName>

<path>/shared/Cache\_DB/Cache\_Repo/CIS\_KPI/test1</path>

<type>TABLE</type>

</storageTargets>

<storageTargets>

<targetName>result2</targetName>

<path>/shared/Cache\_DB/Cache\_Repo/CIS\_KPI/test2</path>

<type>TABLE</type>

</storageTargets>

</storage>

<refresh>

<mode>SCHEDULED</mode>

<schedule>

<startTime>2018-10-01T08:00:00.000Z</startTime>

<refreshPeriod>

<period>DAY</period>

<count>1</count>

</refreshPeriod>

</schedule>

</refresh>

<expirationPeriod>

<period>DAY</period>

<count>1</count>

</expirationPeriod>

<firstRefreshCallback>/shared/Tools/analyze\_table</firstRefreshCallback>

<secondRefreshCallback>/shared/Tools/analyze\_table</secondRefreshCallback>

<clearRule>NONE</clearRule>

</cacheConfig>

</resourceCache>

</ns2:ResourceCacheModule>

General Notes:

The arguments pathToResourceCacheXML 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.

1. Resource Cache 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 ResourceCacheModule XML provides a structure “resourceCache” for updating an existing resource cache and generating the XML from a given set of cacheable resources.

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

<ns2:ResourceCacheModule xmlns:ns2="http://www.dvbu.cisco.com/ps/deploytool/modules">

<resourceCache>

<id>cache5</id>

<resourcePath>/shared/Cache\_DB/test4</resourcePath>

<resourceType>TABLE</resourceType>

<cacheConfig>

<allOrNothing>true</allOrNothing>

<configured>true</configured>

<enabled>false</enabled>

<incremental>true</incremental>

<storage>

<mode>DATA\_SOURCE\_OTPS</mode>

<bucketMode>AUTO\_GEN</bucketMode>

<bucketProperties>

<bucketSchema>CIS\_KPI</bucketSchema>

<bucketPrefix>test</bucketPrefix>

<numBuckets>3</numBuckets>

</bucketProperties>

<dropCreateIdx>false</dropCreateIdx>

<storageDataSourcePath>/shared/Cache\_DB/Cache\_Repo</storageDataSourcePath>

<storageTargets>

<targetName>result</targetName>

<path>/shared/Cache\_DB/Cache\_Repo/CIS\_KPI/test0</path>

<type>TABLE</type>

</storageTargets>

<storageTargets>

<targetName>result1</targetName>

<path>/shared/Cache\_DB/Cache\_Repo/CIS\_KPI/test1</path>

<type>TABLE</type>

</storageTargets>

<storageTargets>

<targetName>result2</targetName>

<path>/shared/Cache\_DB/Cache\_Repo/CIS\_KPI/test2</path>

<type>TABLE</type>

</storageTargets>

</storage>

<refresh>

<mode>MANUAL</mode>

</refresh>

<expirationPeriod>

<period>SECOND</period>

<count>0</count>

</expirationPeriod>

<firstRefreshCallback>/shared/Tools/CacheInitialLoad</firstRefreshCallback>

<secondRefreshCallback>/shared/Tools/CacheDeltaLoad</secondRefreshCallback>

<clearRule>ON\_FAILURE</clearRule>

</cacheConfig>

</resourceCache>

</ns2:ResourceCacheModule>

## Attributes of Interest

***allOrNothing*** – allOrNothing is a boolean (true or false) value that informs DV if cache group refresh policy should be all or nothing; "false" if cache group refresh policy should be best effort. This flag only applies to cache group. For individual cache group, this flag always returns true and setting this flag has no effect.

***configured*** – Configured is a boolean (true or false) value that informs DV whether this cache is configured or not. If a cache is configured and this value is set to false and an updateResourceCache() is performed, the cache is disabled and destroyed and therefore, no longer configured.

***enabled*** – Enabled is a boolean (true or false) value that informs DV whether this cache is enabled or not. A cache may be configured but not enabled. Modifying this value allows the user to control when caching is turned on and off.

***incremental*** – incremental is a boolean (true or false) value that informs DV if the cache is incrementally maintained; otherwise "false". If not provided, the incrementally maintained setting will be left unaltered.

***startTime*** – this is a timestamp value which informs DV when the caching should be started. Notice the “T” in between the data and time. The format is “YYYY-MM-DDTHH24:mm:ss.dddZ”. Year=YYYY, Month=MM, Day=DD, T=XML separator, Hour=HH24 (24 hour military time), Minute=mm, Second=ss, Second Fraction=.ddd (optional), Timezone=Z

***storageTargets.targetName*** – this value is generally set to “result” which signifies that the result cursor from the DV View or Table is being used for column projections in the cache.

***storageTargets.path*** – this is the path to the DV data source table that is being used for caching of the specified resource.

***storageTargets.type*** – this value is always TABLE which signifies that a relational table is being used.

**useDefaultCacheStorage** – boolean. If "true", CIS will use the default cache datasource to store the cache tables. Only numBuckets and dropCreateIdx values are considered when this value is set to "true" rest are ignored.

**bucketMode** (optional) – Present when storage mode is "DATA\_SOURCE\_OTPS", ignored otherwise. May be "AUTO\_GEN" or "MANUAL".

**bucketProperties**

**bucketCatalog** (optional) – database catalog in which to create the bucket.

**bucketSchema** (optional) – database schema in which to create the bucket.

**bucketPrefix** – short string which begins the name of each bucket.

**numBuckets** – number of buckets to use for caching.

**dropCreateIdx** (optional) – boolean. If "true", CIS will automatically drop indexes before loading cache data, and create them after loading.

**firstRefreshCallback** – An optional path pointing to a procedure with zero input elements that should be invoked before the cache refresh.

**secondRefreshCallback** – An optional path pointing to a procedure with zero input elements that should be invoked after a successful or failed cache refresh.

## Attribute Value Restrictions

***mode (storage)*** – this mode defines what type of storage will be used for caching.

* AUTOMATIC=this is the default behavior when a cache is first created. It automatically uses an internal file system file as the cache.
* DATA\_SOURCE=this is configured to use a relational database table for the cache. The data source and table must exist. The table that is created uses the projection of the DV View or Table.

      <xs:element name="mode">  
        <xs:annotation>  
            <xs:documentation xml:lang="en">…</xs:documentation>  
        </xs:annotation>  
        <xs:simpleType>  
            <xs:restriction base="xs:string">  
                <xs:enumeration value="AUTOMATIC"/>  
                <xs:enumeration value="DATA\_SOURCE"/>

                <xs:enumeration value="DATA\_SOURCE\_OTPS"/>

            </xs:restriction>  
         </xs:simpleType>  
      </xs:element>

***clearRule*** – an optional element that may contain one of NONE, ON\_LOAD or ON\_FAILURE. Normally old cache data is cleared on expiration and when a cache refresh successfully completes. In the latter case the old cache data is replaced by the new cached data. If this element is not present, the enable setting will be left unaltered

* NONE=when user clears it manually. Behavior: normal behavior will be used.
* ON\_LOAD=when refresh begins. Behavior: in addition to the normal behavior the old cache data will be cleared when a refresh is started.
* ON\_FAILURE=when refresh fails. Behavior: in addition to the normal behavior the old cache data will be cleared when a refresh fails.

      <xs:element name="clearRule" minOccurs="0">  
          <xs:annotation>  
              <xs:documentation xml:lang="en">…</xs:documentation>  
          </xs:annotation>  
          <xs:simpleType>  
              <xs:restriction base="xs:string">  
                  <xs:enumeration value="NONE"/>  
                  <xs:enumeration value="ON\_LOAD"/>  
                  <xs:enumeration value="ON\_FAILURE"/>  
              </xs:restriction>  
          </xs:simpleType>  
      </xs:element>

***resourceType*** – The resource type is a standard DV type for defining what type of resource is being accessed. The only valid cacheable resource types are “TABLE” and “PROCEDURE”. Other types are described below but are not allowed to be cacheable.

  <xs:simpleType name="ResourceTypeSimpleType">  
    <xs:annotation>  
    <xs:documentation>  
    TYPES / SUBTYPES:  
    =================  
    The following resource types/subtypes are supported by this operation. Resources cannot be created under "/services" unless otherwise noted, and cannot be created within a physical data source.   
  
    (Basic DV folder)  
    \* CONTAINER / FOLDER\_CONTAINER - A DV folder.   
    \* CONTAINER / DIRECTORY\_CONTAINER - A DV directory.  
    (Database)  
    \* CONTAINER / CATALOG\_CONTAINER - A DV catalog folder under a data source.   
    \* CONTAINER / SCHEMA\_CONTAINER - A DV schema container.   
    (Web Services)  
    \* CONTAINER / SERVICE\_CONTAINER - A web service container for the service.   
    \* CONTAINER / OPERATIONS\_CONTAINER - A web service container for the operations  
    \* CONTAINER / PORT\_CONTAINER - A DV web service container for port.   
    (Connectors)  
    \* CONTAINER / CONNECTOR\_CONTAINER - A DV container for connectors.  
    \* CONNECTOR / JMS - A DV JMS Connector.   
    \* CONNECTOR / HTTP - A DV HTTP Connector.   
    \* DATA\_SOURCE / RELATIONAL\_DATA\_SOURCE - A relational database source.  
    \* DATA\_SOURCE / FILE\_DATA\_SOURCE - A comma separate file data source.  
    \* DATA\_SOURCE / XML\_FILE\_DATA\_SOURCE - An XML file data source.  
    \* DATA\_SOURCE / WSDL\_DATA\_SOURCE - A DV web service data source.  
    \* DATA\_SOURCE / XML\_HTTP\_DATA\_SOURCE - An HTTP XML data source.  
    \* DATA\_SOURCE / NONE - A custom java procedure data source.  
  
    \* DEFINITION\_SET / SQL\_DEFINITION\_SET - A DV SQL Definition set.  
    \* DEFINITION\_SET / XML\_SCHEMA\_DEFINITION\_SET - A DV XML Schema Definition set.  
    \* DEFINITION\_SET / WSDL\_DEFINITION\_SET - A DV WSDL Definition set.  
    \* DEFINITION\_SET / ABSTRACT\_WSDL\_DEFINITION\_SET - A DV Abstract WSDL Definition set   
    \* DEFINITION\_SET / SCDL\_DEFINITION\_SET - A DV SCA DV Definition set imported from Designer.  
  
    \* LINK / sub-type unknown - Used to link a DV Data Service to a DV resource such as a view or sql procedure.  
  
    (DV procedures)  
    \* PROCEDURE / SQL\_SCRIPT\_PROCEDURE - A DV SQL Procedure.   
    (Custom procedures)  
    \* PROCEDURE / JAVA\_PROCEDURE - A DV java data source procedure.  
    (Database procedures)  
    \* PROCEDURE / EXTERNAL\_SQL\_PROCEDURE - A DV Packaged Query.   
    \* PROCEDURE / DATABASE\_PROCEDURE - A database stored procedure.  
    (XML procedures)  
    \* PROCEDURE / BASIC\_TRANSFORM\_PROCEDURE - A DV Basic XSLT Transformation procedure.   
    \* PROCEDURE / XSLT\_TRANSFORM\_PROCEDURE - A DV XSLT Transformation procedure.   
    \* PROCEDURE / STREAM\_TRANSFORM\_PROCEDURE - A DV XSLT Streaming Transformation procedure.   
    \* PROCEDURE / XQUERY\_TRANSFORM\_PROCEDURE - A DV XQUERY Transformation Procedure.   
    \* PROCEDURE / OPERATION\_PROCEDURE - A DV web service or HTTP procedure operation.  
  
    \* TABLE / SQL\_TABLE - A DV View.

    \* TABLE / DATABASE\_TABLE - A DV database table.  
    \* TABLE / DELIMITED\_FILE\_TABLE - A DV delimited file table  
    \* TABLE / SYSTEM\_TABLE - A DV system table view.  
  
    \* TREE / XML\_FILE\_TREE - The XML tree structure associated with a file-XML data source.  
  
    \* TRIGGER / NONE - A DV trigger.  
    </xs:documentation>  
    </xs:annotation>  
    <xs:restriction base="xs:string">  
        <xs:enumeration value="CONTAINER"/>  
        <xs:enumeration value="CONNECTOR"/>  
        <xs:enumeration value="DATA\_SOURCE"/>  
        <xs:enumeration value="DEFINITION\_SET"/>  
        <xs:enumeration value="LINK"/>  
        <xs:enumeration value="PROCEDURE"/>  
        <xs:enumeration value="TABLE"/>  
        <xs:enumeration value="TREE"/>  
        <xs:enumeration value="TRIGGER"/>  
    </xs:restriction>  
  </xs:simpleType>

***mode (refresh)*** – This mode defines what type of refresh will occur on the cache. The default behavior is to have a manual cache refresh. The refresh can be configured to be scheduled.

* MANUAL=(default). Manually refresh the cache.
* SCHEDULED=configure the resource to refresh the cache on a scheduled basis.  
        <xs:element name="mode">  
          <xs:annotation>  
              <xs:documentation xml:lang="en">…</xs:documentation>  
          </xs:annotation>  
          <xs:simpleType>  
            <xs:restriction base="xs:string">  
                <xs:enumeration value="MANUAL"/>  
                <xs:enumeration value="SCHEDULED"/>  
            </xs:restriction>  
          </xs:simpleType>  
        </xs:element>

***period (refreshPeriod / expirationPeriod)*** – This is used by the refresh period and expiration period to set the period of time. This element coincides with another element “count” which provides the amount of time for the period qualifier.

* Refresh=when used for refresh, it defines the period of time between cache refreshes.
* Expiration=when used with expiration, it defines the expiration period for the cache.

            <xs:element name="period" minOccurs="1">  
                <xs:simpleType>  
                    <xs:restriction base="xs:string">  
                        <xs:enumeration value="SECOND"/>  
                        <xs:enumeration value="MINUTE"/>  
                        <xs:enumeration value="HOUR"/>  
                        <xs:enumeration value="DAY"/>  
                        <xs:enumeration value="WEEK"/>  
                        <xs:enumeration value="MONTH"/>  
                        <xs:enumeration value="YEAR"/>  
                    </xs:restriction>  
                </xs:simpleType>  
            </xs:element>

1. 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 ResourceCacheModule.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 “*PDTool User's Guide.pdf*”. The abridged version is as follows:

Windows: ExecutePDTool.bat -exec ../resources/plans/UnitTest-ResourceCache.dp

Unix: ./ExecutePDTool.sh -exec ../resources/plans/UnitTest-ResourceCache.dp

***Properties File (UnitTest-ResourceCache.dp):***

Property File Rules:

# ----------------------------

# UnitTest-ResourceCache.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 PDTool.

# 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, PDTool 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 for UNIX:

# -----------------------------------------

#

PASS FALSE ExecuteAction generateResourceCacheXML $SERVERID "/shared/test1" $MODULE\_HOME/getResourceCacheModule.xml $MODULE\_HOME/servers.xml "CONFIGURED TABLE PROCEDURE"

#

PASS FALSE ExecuteAction updateResourceCache $SERVERID "shared1" $MODULE\_HOME/ResourceCacheModule.xml $MODULE\_HOME/servers.xml

#

PASS FALSE ExecuteAction clearResourceCache $SERVERID "shared1" $MODULE\_HOME/ResourceCacheModule.xml $MODULE\_HOME/servers.xml

#

PASS FALSE ExecuteAction updateResourceCacheEnabled $SERVERID "shared1" $MODULE\_HOME/ResourceCacheModule.xml $MODULE\_HOME/servers.xml

#

PASS FALSE ExecuteAction refreshResourceCache $SERVERID "shared1" $MODULE\_HOME/ResourceCacheModule.xml $MODULE\_HOME/servers.xml

## Ant Execution

The full details on build file setup and ant execution can be found in the document “*PDTool User's Guide.pdf*”. The abridged version is as follows:

Windows: ExecutePDTool.bat -ant ../resources/ant/build-ResourceCache.xml

Unix: ./ExecutePDTool.sh -ant ../resources/ant/build-ResourceCache.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="&quot;&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="resourceCacheIds" value="shared1"/>

<property name="pathToGenResCacheXML" value="${MODULE\_HOME}/getResourceCacheModule.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.tibco.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="Generate" action="generateResourceCacheXML" arguments="${SERVERID}^/shared/test1^${pathToGenResCacheXML}^${pathToServersXML}^ CONFIGURED,TABLE,PROCEDURE" endExecutionOnTaskFailure="TRUE" />

<!-- Windows or UNIX: Entire list of actions

<executeJavaAction description="Generate" action="generateResourceCacheXML" arguments="${SERVERID}^/shared/test1^${pathToGenResCacheXML}^${pathToServersXML}^ CONFIGURED,TABLE,PROCEDURE" endExecutionOnTaskFailure="TRUE" />

<executeJavaAction description="Update" action="updateResourceCache" arguments="${SERVERID}^${resourceCacheIds}^${pathToResourceCacheXML}^${pathToServersXML}" endExecutionOnTaskFailure="TRUE" />

<executeJavaAction description="Clear" action="clearResourceCache" arguments="${SERVERID}^${resourceCacheIds}^${pathToResourceCacheXML}^${pathToServersXML}" endExecutionOnTaskFailure="TRUE" />

<executeJavaAction description="Refresh" action="refreshResourceCache" arguments="${SERVERID}^${resourceCacheIds}^${pathToResourceCacheXML}^${pathToServersXML}" endExecutionOnTaskFailure="TRUE" />

<executeJavaAction description="Update" action="updateResourceCacheEnabled" arguments="${SERVERID}^${resourceCacheIds}^${pathToResourceCacheXML}^${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 “resourceCacheIds”.

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

Example command-line property file

PASS FALSE ExecuteAction updateResourceCache $SERVERID "rc1,rc2" $MODULE\_HOME/ResourceCacheModule.xml $MODULE\_HOME/servers.xml

Example Ant build file

<executeJavaAction description="Update" action="updateResourceCache" arguments="${SERVERID}^**rc1,rc2**^${pathToResourceCacheXML}^${pathToServersXML}"

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

Example command-line property file

PASS FALSE ExecuteAction updateResourceCache $SERVERID "\*" $MODULE\_HOME/ResourceCacheModule.xml $MODULE\_HOME/servers.xml

Example Ant build file

<executeJavaAction description="Update" action="updateResourceCache" arguments="${SERVERID}^**\***^${pathToResourceCacheXML}^${pathToServersXML}"

* 3. ***Exclusion List*** - CSV string with '-' or whatever is configured to indicate exclude resources as prefix like “-id1,id2”
  + PDTool 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 updateResourceCache $SERVERID "-rc3,rc4" $MODULE\_HOME/ResourceCacheModule.xml $MODULE\_HOME/servers.xml

Example Ant build file

<executeJavaAction description="Update" action="updateResourceCache" arguments="${SERVERID}^**-rc3,rc3**^${pathToResourceCacheXML}^${pathToServersXML}"

1. PDTool Examples

The following are common scenarios when using the ResourceCacheModule.

## Scenario 1 – Generate Resource Cache XML

**Description:**

Generate the resource cache XML property file for /examples using the “CONFIGURED TABLE PROCEDURE” options.

**XML Configuration Sample:**

Not applicable for this example.

**Execution Sample:**

Unix: ./ExecutePDTool.sh -exec ../resources/plans/UnitTest- ResourceCache.dp

Property file setup for UnitTest-ResourceCache.dp:

# -----------------------------------------

# Begin task definition list for UNIX:

# -----------------------------------------

# Generate resource cache entries to ResourceCacheModule2.xml

PASS FALSE ExecuteAction generateResourceCacheXML $SERVERID "/shared/examples" %MODULE\_HOME%/ResourceCacheModule2.xml %MODULE\_HOME%/servers.xml "CONFIGURED TABLE PROCEDURE"

**Results Expected:**

The file getResourceCacheModule.xml is produced with only resourceCache nodes populated from the path /shared/examples.

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

<ns2:ResourceCacheModule xmlns:ns2="http://www.dvbu.cisco.com/ps/deploytool/modules">

<resourceCache>

<id>shared1</id>

<resourcePath>/shared/examples/ds\_orders/orders</resourcePath>

<resourceType>TABLE</resourceType>

<cacheConfig>

<configured>true</configured>

<enabled>true</enabled>

<storage>

<mode>DATA\_SOURCE</mode>

<storageDataSourcePath>/shared/examples/ds\_orders</storageDataSourcePath>

<storageTargets>

<targetName>result</targetName>

<path>/shared/examples/ds\_orders/orders\_cache</path>

<type>TABLE</type>

</storageTargets>

</storage>

<refresh>

<mode>MANUAL</mode>

</refresh>

<expirationPeriod>

<period>SECOND</period>

<count>0</count>

</expirationPeriod>

<clearRule>NONE</clearRule>

</cacheConfig>

</resourceCache>

</ns2:ResourceCacheModule>

## Scenario 2 – Clear and Refresh the cache

**Description:**

Clear and Refresh the cache.

**XML Configuration Sample:**

Use the Resource Cache XML file that was generated in scenario 1. Copy the “shared1” resourceCache entry and paste it directly below the last </resourceCache> closing element. Modify the id to be “shared2”. Remove the entire element <cacheConfig>...</cacheConfig>. It should look like this:

<resourceCache>

<id>shared2</id>

<resourcePath>/shared/examples/ds\_orders/orders</resourcePath>

<resourceType>TABLE</resourceType>

</resourceCache>

**Execution Sample:**

Unix: ./ExecutePDTool.sh -exec ../resources/plans/UnitTest- ResourceCache.dp

Property file setup for UnitTest-ResourceCache.dp:

# -----------------------------------------

# Begin task definition list for UNIX:

# -----------------------------------------

PASS FALSE ExecuteAction clearResourceCache $SERVERID "shared2" %MODULE\_HOME%/ResourceCacheModule2.xml %MODULE\_HOME%/servers.xml

PASS FALSE ExecuteAction refreshResourceCache $SERVERID "shared2" %MODULE\_HOME%/ResourceCacheModule2.xml %MODULE\_HOME%/servers.xml

**Results Expected:**

The script will report “PASS” for the execution of this action. Open DV Studio and review the changes for Studio. The cache status should now be “green” and “UP”.

## Scenario 3 – Update Cache Configuration (Enable/Disable)

**Description:**

Enable/Disable the cache for a given resource.

**XML Configuration Sample:**

Use the Resource Cache XML file that was generated in scenario 1. Copy the “shared1” resourceCache entry and paste it directly below the last </resourceCache> closing element. Modify the id to be “shared3”. Leave the <cacheConfig>...</cacheConfig> element. Remove all elements inside except <enabled>. It should look like this:

<resourceCache>

<id>shared3</id>

<resourcePath>/shared/examples/ds\_orders/orders</resourcePath>

<resourceType>TABLE</resourceType>

<cacheConfig>

<enabled>false</enabled>

</cacheConfig>

</resourceCache>

**Execution Sample:**

Unix: ./ExecutePDTool.sh -exec ../resources/plans/UnitTest- ResourceCache.dp

Property file setup for UnitTest-ResourceCache.dp:

# -----------------------------------------

# Begin task definition list for UNIX:

# -----------------------------------------

PASS FALSE ExecuteAction updateResourceCache $SERVERID "shared3" %MODULE\_HOME%/ResourceCacheModule2.xml %MODULE\_HOME%/servers.xml

**Results Expected:**

The script will report “PASS” for the execution of this action. Open DV Studio and review the changes for Studio. The cache should now be disabled and the status should now be “gray” and “DISABLED”.

## Scenario 4 – Update Cache Configuration (Enable/Disable) for all cached resources in a folder and sub-folders.

**Description:**

Recursively walk the given folder and sub-folders interrogating resources for a configured cache and “enable” or “disable” the cache for all cached resources found within the boundaries of the starting folder.

**XML Configuration Sample:**

Use the Resource Cache XML file that was generated in scenario 1. Copy the “shared3” resourceCache entry and paste it directly below the last </resourceCache> closing element. Modify the id to be “shared4”. Modify the resource path to be “/shared/examples” and the resource type to be “CONTAINER”. Leave the <cacheConfig>...</cacheConfig> element. Remove all elements inside except <enabled>. It should look like this:

<resourceCache>

<id>shared4</id>

<resourcePath>/shared/examples</resourcePath>

<resourceType>CONTAINER</resourceType>

<cacheConfig>

<enabled>false</enabled>

</cacheConfig>

</resourceCache>

**Execution Sample:**

Unix: ./ExecutePDTool.sh -exec ../resources/plans/UnitTest- ResourceCache.dp

Property file setup for UnitTest-ResourceCache.dp:

# -----------------------------------------

# Begin task definition list for UNIX:

# -----------------------------------------

PASS FALSE ExecuteAction updateResourceCacheEnabled $SERVERID "shared4" %MODULE\_HOME%/ResourceCacheModule2.xml %MODULE\_HOME%/servers.xml

**Results Expected:**

The script will report “PASS” for the execution of this action. Open DV Studio and review the changes for Studio. The cache should now be disabled and the status should now be “gray” and “DISABLED”.

This method will output the following to the PDTool log:

2014-01-27 10:24:35,721 main INFO [com.tibco.ps.deploytool.services.ResourceCacheManagerImpl] - <processing action ENABLE\_DISABLE on resource cache /shared/examples>

2014-01-27 10:24:41,525 main INFO [com.tibco.ps.deploytool.services.ResourceManagerImpl] - <Resource exists? [true] /shared/examples on server localhost9420>

2014-01-27 10:24:42,587 main INFO [com.tibco.ps.deploytool.services.ResourceCacheManagerImpl] - <Cache operation (enable)=false prevStatus=true currStatus=false resourceType=TABLE resourcePath=/shared/examples/ds\_orders/orders>

1. 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.

1. Conclusion

## Concluding Remarks

The Promotion and Deployment Tool is a set of pre-built modules intended to provide a turn-key experience for promoting DV resources from one DV 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 Professional Services for the advancement of the “***Promotion and Deployment Tool***”.