



Transport Tool

User Guide

Changepoint 2017

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1. Transport Tool Introduction

About the Transport Tool

The intended use of the Transport Tool is for synchronizing configuration data between a master instance and multiple target instances of the same Changepoint production environment. For example, you can export configuration data from a master test environment, and import the configuration data to a target production environment.

Warning: The use of the Transport Tool to manage the synchronization of configuration data between two or more discrete production environments is not supported.

The Transport Tool is a separately licensed add-on to Changepoint that includes the following functionality:

- exporting and importing of configuration elements in multiple categories
- maintenance of table relationships in order to enforce data and program integrity during transports
- basic validation logic in order to identify conflicting records
- advanced validation logic to ensure data integrity
- roles, features, and license data

File path conventions

Throughout this document, the following conventions are used for common paths:

Convention	Meaning
<cp_root>	The root path of the Changepoint installation. The default is: C:\Program Files (x86)\Changepoint\Changepoint\
<cp_common>	The root location for common Changepoint utilities, such as the Login Settings utility. The default is: C:\Program Files (x86)\Common Files\Changepoint\Changepoint\

Overview of Transport Tool processes

The Transport Tool uses export and import processes to move configuration data from a source (master) Changepoint database to a temporary staging database (CPTransport), and then into the destination (target) Changepoint database. The export process pushes configuration data to the CPTransport database, and the import process pulls configuration data from the CPTransport database.

The master server and target server both have the CPTransport staging database. Once the CPTransport database has been populated, you must manually move it from the master to the target server by doing a database restore or attachment.

The Transport Tool does not transfer files associated with the core Changepoint server configuration, which includes ASP files, COM objects, and stored procedures. You must perform file updates and additions directly on the associated servers. For example, if the new configuration gives users access to a new report, the Transport Tool will transfer the setup of the new report and the associated user access rights, but will not transfer the report file to the proper subdirectory on the target server.

Upgrading the Transport Tool

Upgrading the Transport Tool consists of deleting the old version of the tool and then installing the new (current) version. Because the Transport Tool setup requires that the master and target database contain the exact same data, you must upgrade to the current Changepoint release before installing the Transport Tool.

1. On the target (production) environment:
 - a. Upgrade the Changepoint environment to the current Changepoint release.
 - b. On the SQL Server, delete the CPTransport database.
 - c. Install the new Transport Tool database. For more information, see "Installing the Transport Tool" on page 7.
2. Back up the target (production) database and restore it in the master environment to create a new master database that is in sync with the target (production) database.
3. On the master environment, upgrade the Changepoint web server.

Installing the Transport Tool

Before installing the Transport Tool, you must review the configuration requirements in the Changepoint Product Architecture and Technology Matrix. You can access the matrix through the Client Portal, in the team folder for the current Changepoint release.

Installing the database files

1. Ensure that the SQL account that is listed in the Changepoint `Web.config` file has dbo rights to the CPTransport database.
2. Copy the `CPTransport.mdf` file from the Changepoint product media to the location that corresponds to your organization's best practices for installing SQL databases.
3. Using SQL Server Management Studio, attach the CPTransport database, and ensure that it is owned by the sa account.

Configuring the connection settings

You use the login settings utility to configure the connection settings. The utility encrypts the values that you specify, and updates the configuration file with the encrypted values.

1. Run the login settings utility (`Login Settings.exe`).

The default path to this file is:

```
<cp_common>\Login Settings\Login Settings.exe
```

The **Changepoint Connection Settings** dialog box appears.

2. In the **Connection Settings** list, select **Transport Tool**.
3. In the **File location** field, select the Changepoint `Web.config` file on the server that will be updated. The default path of this file is:

```
<cp_root>\Enterprise\Web.config
```

- a. Click **Open**. The **Unlock Settings** dialog box appears.
 - b. In the **User ID** and **Password** fields, do one of the following:
 - If you are configuring the connection settings on the Transport Tool for the first time, enter `USERID` and `PASSWORD`, and then click **OK**. The fields are case sensitive.
 - If you have previously configured the connection settings for the Transport Tool, enter the user ID and password that were previously used, and then click **OK**.
4. In the **Connection Settings** section, complete the fields as follows:

- **Server** – Enter the name of the SQL Server
 - **Database** – Enter CPTransport
5. To verify that the connection string can access the database, click **Test**.
 6. When the test is successful, click **Save**.
 7. Click **Close**.

Setting up the Transport Tool in Changepoint Administration

Setting up the transport tool includes the following steps. For more information, see the *Changepoint Administration Guide*.

1. Import the Transport Tool license file.
2. Grant access to the Transport Tool. Assign the **Access Transport Tool** feature to the resources that require access to the Transport Tool.

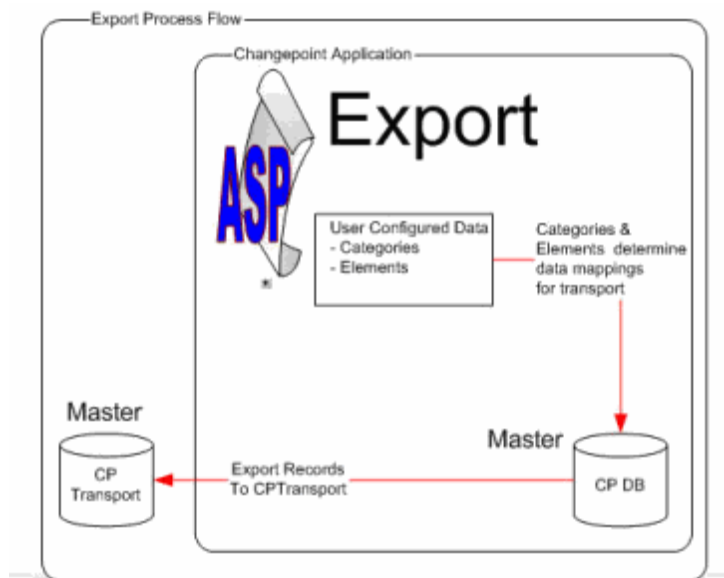
2. Data Export and Import

About exporting and importing configuration data

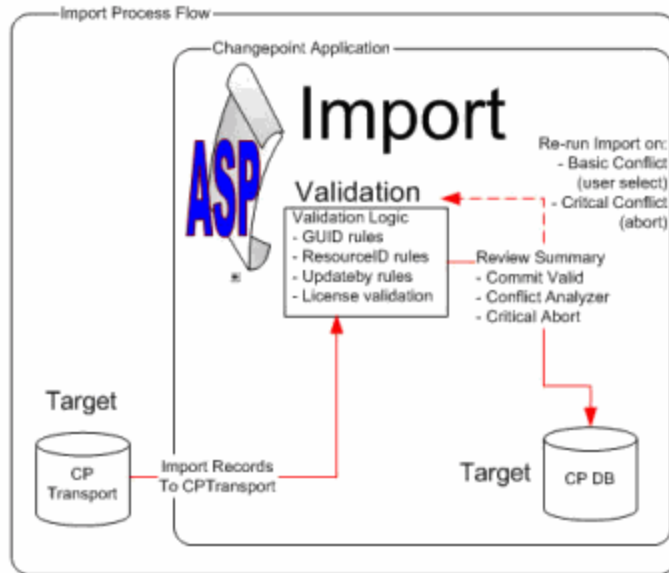
The main steps in the export and import process are:

1. Export the configuration data.
2. Transfer the CPTransport database.
3. Import the configuration data.

The export process is illustrated in the following diagram.



The import process is illustrated in the following diagram.



Required administrative tasks and assumptions

- Resources (users) are managed on the target or production server.
- License management is maintained on the master database.
- The CPTransport database must be manually relocated from the master server to the target server.

Changepoint data elements

The Transport Tool organizes configuration data into categories and elements. Each element has been configured to capture the required data and prerequisite tables. The list of categories and associated elements are included in the following table.

Category	Element
Financial Setup	<ul style="list-style-type: none">• Adjustment Reason Codes• Batch Invoice Setup• Billing Offices• Budget Settings• Cost Centers• Currencies• Exchange Rates• Expense Setup• Fiscal Periods• GLA Code Setup• Invoicing• Payment Terms• Remit To Offices• Revenue Configuration• Revenue Recognition Setup• Revenue Type GLA• Tax By Location• Tax Rates and Schedules• Work Codes• Work Locations
Functional Setup	<ul style="list-style-type: none">• Changepoint Portal• Configuration• Customer/Contact Setup• Funding and Scenario Setup• Knowledge Categories• Knowledge Subscriptions• Legal Disclaimer• Products• Project Setup• Qualifications and Functions Setup• Report Access• Report Setup• Resource Demand Analysis• Sales Methodology

Category	Element
Metadata	<ul style="list-style-type: none">• Metadata
Organization, Resources and Licenses	<ul style="list-style-type: none">• Global Workgroups• Password Settings• Roles & Features (Licenses)• Workgroups
Strings and PCID	<ul style="list-style-type: none">• Strings and PCID

Category	Element
Support Management	<ul style="list-style-type: none">• Additional UI Fields• Asset Options• Asset Options Lookups• Asset Types• Project Request Access• Request Categories/Types• Request Queues• Support Desks

Category	Element
System-Wide Setup	<ul style="list-style-type: none">• Alternate Name Setup• Available Planning Units• Client Portal Management• Context Sensitive Help• Countries• Criteria Type• Custom Code Settings• Customer History Tracking• Days - Time Setting• Display Options• Email Integration• Email Templates• Export Batch Numbers• Export Data Types• Export Definitions• Export Setup• Export Views• Lock Change point Settings• Non-Project Tasks• Payroll Cycle• Postal Codes• Sections• Server Integration• Sign in and Password Validation• SSL Support• States and Provinces• Task Status Codes• Terminology• Time Control• Time Zones• User Management• Workflow Management

About validating the configuration data

Before you can import, you must validate the import data. There are two levels of validation conflicts: critical and basic.

Critical validation logic

Critical validation includes licenses and license conformance. The following is a list of the critical validation rules. If any of these conditions are not met, the import is terminated.

- Neither the import or the export process can be run while more than one person is signed in to Changepoint.
- Cannot delete a global workgroup that has resources assigned to it.
- Cannot delete a workgroup that has resources assigned to it.
- ServerSettings.PlanInDays in the master database must match ServerSettings.PlanInDays in the target database.
- Role cannot exist in the target database and not in the master database.
- If Role/Feature configuration data is transported, either directly or as a dependency, Changepoint license validation is applied. License compliance must be maintained on the master to support full license compliance. A lack of compliance between Target and Master results in a critical license conflict.

Basic validation logic

Basic conflicts do not terminate the import process. However, only the records that do not have conflicts are processed.

The primary key columns of each record and the corresponding update date/time values are verified. The validation logic is summarized in the following table.

Primary Key	Update Date/Time	Action
Record exists in master, not in target	N/A	Insert
Master record matches target	Master = Target	Update
Master record matches target (UpdatedOn Exists)	Master > Target	Update
Master record matches target (UpdatedOn Exists)	Master < Target	Conflict
Record exists in target, not in master	Master <> Target	Synchronization Conflict

2. Data Export and Import

Basic validation logic also reviews records for unique ResourceID instances. ResourceIDs can be found in the following tables and reference areas.

Resource Element	Source Table	Reference Table
Record exists in master, not in target	N/A	SecondLevelApproversID AltSecondLevelApproversID DelegateTimeApproverId DelegateAltTimeApproverId
Tax By Location, Work Locations, Products	ProductCategory	ProductCategoryManager
Tax By Location, Work Locations, Products	Product	ProductDevelopers
Expense Setup, Invoicing, Tax By Location, Work Locations, Customer/Contact Setup, Products, Project Setup, Report Access, Workgroups, Code Configurations	Workgroup	DefaultTimeApprover DefaultExpenseApprover
Support Desks, Request Workflow	HelpDesk	HelpDesk.HelpDeskMgr

Unique ResourceID	Action
Master.ResourceId = Target.ResourceId	Update
Master.ResourceId NOT EXISTS Target.ResourceId	Conflict
Master.ResourceId = NULL	Update
Master.ResourceId = @NullId	Update

UpdatedBy fields are included in many tables in the Changepoint database. Basic validation logic is applied to these values. The following conditions summarize the UpdatedBy ResourceID validation logic.

UpdatedBy	Value
Master.UpdatedBy = NULL	NULL
Master.UpdatedBy = @NullId	@NullId
Master.UpdatedBy <> Null or @NullId	ResourceId of the user running the tool.

Exporting the configuration data

1. Sign in to Changepoint Administration on the master Changepoint website.
2. Click **Tools > Transport Tool Export Configuration**.

The **Transport Tool Export Configuration** view appears.
3. In the **Export category** list, select the export category.
4. In the **Export Elements** list, select the check boxes for the elements that you want to include in the export configuration package.
5. Select additional export categories and elements as required.
6. To start the export process, click **Export**.

The **Export Configuration Processing Log** appears.

Transferring the CPTransport database

Move the CPTransport database from the master server to the target server by doing a database restore or attachment.

Importing the configuration data

1. Sign in to Changepoint Administration on the target Changepoint website.
2. Lock Changepoint (**Tools > Lock Changepoint**).
3. Click **Tools > Transport Tool Import Configuration**.

The **Transport Tool Import Configuration** view appears.
4. To start the validation process, click **Validate**.
5. If the **Import Package Critical Validation Errors** table and/or **Import Package Critical License Errors** table appears:

- a. Review and then correct all of the critical and license conflicts.
 - b. Restart the validation process.
6. If the **Import Package Preprocessing Log** appears with a preprocessing status of **Failed**:
 - a. Click **Conflict analyzer**.
 - b. Review the conflicts and synchronization errors.
7. To proceed with the import, click **Import**.

The **Import Package Post-Processing Log** appears.

Import processing is logged to the database in the `VersionHistory` table:

- `Event Descriptions` logs the transaction event
- `Event Date` logs the transaction date
- `Event Account Info` logs the transport initiator and the server name