Replication Server Command Line Interface Utility

Usage Guide

Version 1.1

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1.0 Introduction

This document describes the Replication Command Line Interface (CLI) Utility. This command line utility is provided for administration and configuration of the EnterpriseDB Replication Server. The EnterpriseDB Replication Server provides trigger based asynchronous replication across EnterpriseDB and Oracle databases. Its current client side interface is a graphical user interface built on the Java Swing API. The CLI is another client side application in the form of a command line interface to allow replication administration and manipulation functionality.

2.0 Background

The EnterpriseDB Replication Server application is an n-tier application that consists of the following components:

- **Publication Server:** This component is the publication back end server which exposes the RMI interface for various publication related operations. It is also referred to as the publication service.
- **Subscription Server:** This component is the subscription back end server which exposes the RMI interface for various subscription related operations. It is also referred to as the subscription service. The subscription server also communicates with the publication server.
- **DBA Management Server:** The DBA Management Server is the middleware component which exposes the web service interface for managing life cycle events of the publication and subscription servers. It also provides an authentication feature for client applications that need access to the publication and subscription RMI interface.
- **Replication Console Graphical User Interface:** The Replication Console GUI is a Java Swing based client front end application. It communicates with the publication and subscription services and the DBA Management Server and lets the user easily configure replication between Oracle and EnterpriseDB and vice-versa.

3.0 Prerequisites

In order to use the CLI utility, the machine on which the EnterpriseDB Replication CLI will run should have network access to the system that will host the publication and subscription servers.

4.0 How to Run

The Replication CLI Utility is installed as part of the Replication GUI Console and is available underneath the EDB_HOME/rpconsole/repcli folder. EDB_HOME refers to the root installation path for EnterpriseDB - e.g., the default on Linux is /opt/PostgresPlus/8.3AS.

Change to the “repcli” sub-folder and issue the command as illustrated against each of the supported API commands described in the later sections of the document. For example to display the usage guideline, run the following command.

```
$ java -jar edb-repcli.jar –help
```

The user can also group all the command-line parameters in a text file and specify it at the command line via "paramfile" parameter.

For example one can create a publication via the following command.

```
java -jar edb-repcli.jar -paramfile createpub_param.txt
```

where the createpub_param.txt is a text file that has the following contents.

```
-createpub pub1 -mgmtsvrfile msvr.prop -pubdbid 1 -reptype trans -tables
SCOTT.DEPT SCOTT.EMP
```

NOTE: It's recommended to either make use of paramfile or provide all the parameters on the command-line; using a combination of both (such that subset of parameters are specified at the command-line and rest in paramfile) may lead to issues.

5.0 API Commands Specifications

The following sections provide a description of each of the CLI commands as well as an example of their usage.

The command synopsis uses the typographical conventions described below:

- Each command line operation is followed by a hyphen -.
- Square brackets [ ] enclose arguments which are optional.
- Curly brackets { } enclose arguments which are required.
- The value of an argument is enclosed in angle brackets. < >
- Alternate arguments are separated with a pipe symbol |

Note:

There is one special argument, -mgmtsvrfile, required by all commands which requires special attention. The value of this argument is a path to a text file which specifies the configuration details of the DBA Management Server. The format of this file is as follows:

```
#Comments: File Name: msvr.prop
#Management Server Authentication Properties
host=localhost
port=9000
dbuser=enterprisedb
dbpassword=SJ70z8Gk0zY=
```

NOTE: In the above example file, the password is in encrypted form. For more details on how to generate an encrypted password, refer to section 2.2 “Encrypt Text”.

As discussed in section 2.0, the DBA Management Server authenticates as well as controls the life cycle of publication and subscription services. The contents of the management server file is used to connect to the DBA Management Server for this purpose.

Common Operations

The following operations are specific to the Replication CLI application and are not dependent on any particular publication or subscription service.

5.1 Print Replication CLI Version

Synopsis:

```
-version
```

Description:

This command will print the Replication CLI application's version.

Example:

```
java -jar edb-repcli.jar -version
```

5.2 Encrypt Text

Synopsis:

```
-encrypt [-input <file>] [-output <file>]
```

Description:

This command will read the contents of the input file and generate it in encrypted form in the output file. It can then be used to provide the encrypted password where required by various other commands of this application. The output file will be overwritten if it already exists.

Example:

```
java -jar edb-repcli.jar -encrypt -input ./pass.txt -output ./encpass.txt
```

Publication Operations

The following are various publication related operations which are handled by the Replication CLI application.

5.3 Start Publication Service

Synopsis:

```
-startpubservice [-mgmtsvrfile <file>]
```

Description:

This command will start the publication service. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -startpubservice -mgmtsvrfile ./msvr.prop
```

5.4 Stop Publication Service

Synopsis:

```
-stoppubservice [-mgmtsvrfile <file>]
```

Description:

This command will stop the publication service. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -stoppubservice -mgmtsvrfile ./msvr.prop
```

5.5 Add Publication Database

Synopsis:

```
-addpubdb [-mgmtsvrfile <file>] [-dbtype <oracle|enterprisedb>] [-dbhost
<host>] [-dbport <port>] [-dbuser <user>] [-dbpassword <encPass>|-dbpassfile
<file>] [-database <database|sid>]
```

Description:

This command will add a publication database. It takes the path to the management server authentication details file. -dbtype specifies whether the database is Oracle or EnterpriseDB. It is followed by various arguments for the database such as host, port, user and database name (in case of EnterpriseDB) or SID (in case of Oracle). It will print the database ID of the newly added database. This database ID may be used by other command line options.

Example:

```
java -jar edb-repcli.jar -addpubdb -mgmtsvrfile ./msvr.prop -dbtype oracle -
dbhost 127.0.0.1 -dbport 1521 -dbuser hr -dbpassfile ./pubdbencpass.txt -
database XE
```

5.6 Print Publication Database IDs

Synopsis:

```
-printpubdbids [-mgmtsvrfile <file>]
```

Description:

This command will print the IDs of all databases which are registered with the publication service. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -printpubdbids -mgmtsvrfile ./msvr.prop
```

5.7 Print Publication Database IDs Details

Synopsis:

```
-printpubdbidsdetails [-mgmtsvrfile <file>]
```

Description:

This command will print the details of all databases which are registered with the publication service in the form of id:host:port:database:user. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -printpubdbidsdetails -mgmtsvrfile ./msvr.prop
```

5.8 Update Publication Database

Synopsis:

```
-updatepubdb [-mgmtsvrfile <file>] [-pubdbid <id>] [-dbhost <host>] [-dbport
<port>] [-dbuser <user>] [-dbpassword <encPassword>|-dbpassfile <file>] [-
database <database|sid>]
```

Description:

This command will update the publication database. It takes the path to the management server authentication details file, database ID, and relevant arguments.

Example:

```
java -jar edb-repcli.jar -updatepubdb -mgmtsvrfile ./msvr.prop -pubdbid 1 -
dbhost 127.0.0.1 -dbport 1521 -dbuser hr -dbpassfile ./pubdbencpass.txt -
database XE
```

5.9 Remove Publication Database

Synopsis:

```
-removepubdb [-mgmtsvrfile <file>] [-pubdbid <id>]
```

Description:

This command will remove the database. It takes the path to the management server authentication details file and database ID of the database to be removed.

Example:

```
java -jar edb-repcli.jar -removepubdb -mgmtsvrfile ./msvr.prop -pubdbid 1
```

5.10 Print Tables for New Publication

Synopsis:

```
-gettablesfornewpub [-mgmtsvrfile <file>] [-pubdbid <id>]
```

Description:

This command will print the tables and views which are available for creating a new publication. It takes the path to the management server authentication details file and database ID from which the available tables/views list needs to be obtained.

Example:

```
java -jar edb-repcli.jar -gettablesfornewpub -mgmtsvrfile ./msvr.prop -
pubdbid 1
```

5.11 Create Publication

Synopsis:

```
-createpub <pubName> [-mgmtsvrfile <file>] [-pubdbid id] [-reptype <t|s>] [-
tables <schema.t1 schema.t2 schema.t3 ...>] {-views <schema.v1 schema.v2
schema.v3 ...>} {-tablesfilterclause <[[index]:[clause]] ...>} {-
viewsfilterclause <[[index]:[clause]] ...>}
```

Description:

This command will create a new publication. Views are optional and will be ignored if replication type is transnational. The table filter clause and view filter clause follow an index based pattern such that 1:FilterClause points to the first table and/or view specified in tables and/or view arguments, respectively.

Example:

```
java -jar edb-repcli.jar -createpub pub1 -mgmtsvrfile ./msvr.prop -pubdbid 1
-reptype t -tables HR.COUNTRIES HR.EMPLOYEES HR.DEPARTMENTS -
tablesfilterclause “1:REGION_ID <> 3” “3:DEPARTMENT_NAME = ‘SALES’”
```

5.12 Add Tables Into Publication

Synopsis:

```
-addtablesintopub <pubName> [-mgmtsvrfile <file>] [-tables <schema.t1
schema.t2 schema.t3 ...>] {-views <schema.v1 schema.v2 schema.v3 ...>} {-
tablesfilterclause <[[index]:[clause]] ...>} {-viewsfilterclause
<[[index]:[clause]] ...>}
```

Description:

This command will update an existing publication. Views are optional and will be ignored if replication type is transnational. The table filter clause and view filter clause follow an index based pattern such that 1:FilterClause points to the first table and/or view specified in tables and/or view arguments, respectively.

Example:

```
java -jar edb-repcli.jar -addtablesintopub pub1 -mgmtsvrfile ./msvr.prop -
tables HR.LOCATIONS -tablesfilterclause “1:COUNTRY_ID=’US’”
```

5.13 Remove Tables from Publication

Synopsis:

```
-removetablesfrompub <pubName> [-mgmtsvrfile <file>] [-tables <schema.t1
schema.t2 schema.t3 ...>] {-views < schema.v1 schema.v2 schema.v3 ...>}
```

Description:

This command will remove tables from an existing publication. Views are optional and will be ignored if replication type is transnational.

Example:

```
java -jar edb-repcli.jar -removetablesfrompub pub1 -mgmtsvrfile ./msvr.prop -
tables HR.LOCATIONS
```

5.14 Print Publication List

Synopsis:

```
-printpublist [-mgmtsvrfile <file>] {-pubdbid id}
```

Description:

This command will print the publications of a publication service. If a publication database ID is specified it will only print publications registered against that particular database. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -printpublist -mgmtsvrfile ./msvr.prop -pubdbid 1
```

5.15 Remove Publication

Synopsis:

```
-removepub <pubname1> <pubnameN> [-mgmtsvrfile <file>]
```

Description:

This command will remove the publications specified on the command line.

Example:

```
java -jar edb-repcli.jar -removepub pub1 pub2 -mgmtsvrfile ./msvr.prop
```

5.16 Cleanup Replication History

Synopsis:

```
-cleanrephistory [-mgmtsvrfile <file>]
```

Description:

This command will clean replication history. It takes the path to the management server authentication file where the publication service is running.

Example:

```
java -jar edb-repcli.jar -cleanrephistory -mgmtsvrfile ./msvr.prop
```

5.17 Validate All Publications

Synopsis:

```
-validatepubs [-mgmtsvrfile <file>] [-pubdbid id]
```

Description:

This command will validate the published tables' schema definition for all available publications under a given database to track if the source table schema definition has changed since publication creation time.

Example:

```
java -jar edb-repcli.jar -validatepubs -mgmtsvrfile ./msvr.prop -pubdbid 1
```

5.18 Configure Cleanup Job

Synopsis:

```
-confcleanupjob <pubdbid> [-mgmtsvrfile <file>] [-enable [-hourly <1-12> | -
daily <0-23> | -weekly  <Monday-Sunday> <0-23>] | -disable]
```

Description:

This command will configure a job that will clean shadow table history for a given database. –disable will remove the already configured job whereas -enable will configure the cleanup job for the specified time period.

Example:

```
java -jar edb-repcli.jar -confcleanupjob 1 -mgmtsvrfile ./msvr.prop -disable
```

```
java -jar edb-repcli.jar -confcleanupjob 1 -mgmtsvrfile ./msvr.prop -enable -
weekly Monday 14
```

5.19 Cleanup Replication History for Publication

Synopsis:

```
-cleanrephistoryforpub <pubName> [-mgmtsvrfile <file>]
```

Description:

This command will clean replication history for a given publication. It takes the path to the management server authentication file where the publication service is running.

Example:

```
java -jar edb-repcli.jar -cleanrephistoryforpub pub1 -mgmtsvrfile ./msvr.prop
```

5.20 Cleanup Shadow Table History for Publication

Synopsis:

```
-cleanshadowhistforpub <pubName> [-mgmtsvrfile <file>]
```

Description:

This command will clean shadow table history (processed transactional changes) for a given publication. It takes the path to the management server authentication file where the publication service is running.

Example:

```
java -jar edb-repcli.jar -cleanshadowhistforpub pub1 -mgmtsvrfile ./msvr.prop
```

5.21 Update Filter Clause

Synopsis:

```
-updatefilterclause <pubName> [-mgmtsvrfile <file>] [-table
<tableName|viewName>] [-filterclause <filterClause>]
```

Description:

This command will update the filter clause of the given table. It takes the path to the management server authentication file where the publication service is running.

Example:

```
java -jar edb-repcli.jar -updatefilterclause pub1 -mgmtsvrfile ./msvr.prop -
table HR.JOBS -filterclause “MAX_SALARY>5000”
```

5.22 Print Filter Clause

Synopsis:

```
-printfilterclause <pubName> [-mgmtsvrfile <file>] [-table
<tableName|viewName>]
```

Description:

This command will print the filter clause of a given table. It takes the path to the management server authentication file where the publication service is running.

Example:

```
java -jar edb-repcli.jar -printfilterclause pub1 -mgmtsvrfile ./msvr.prop -
table HR.JOBS
```

5.23 Remove Filter Clause

Synopsis:

```
-removefilterclause <pubName> [-mgmtsvrfile <file>] [-table
<tableName|viewName>]
```

Description:

This command will remove the filter clause of a given table. It takes the path to the management server authentication file where the publication service is running.

Example:

```
java -jar edb-repcli.jar -removefilterclause pub1 -mgmtsvrfile ./msvr.prop -
table HR.JOBS
```

5.24 Save Publication Service JVM Options

Synopsis:

```
-setpubjvmopts [-mgmtsvrfile <file>] {-append} [-jvmoptions <file>]
```

Description:

This command will save the JVM options for the publication server. The JVM options are specified in a text file where each option appears on a separate line. If the -append argument is specified, the options will be appended in front of existing options, otherwise it will reset previous options.

Example:

```
java -jar edb-repcli.jar -setpubjvmopts -mgmtsvrfile ./msvr.prop -append -
jvmoptions ./pubjvmopts.txt
```

5.25 Print Publication Service JVM Options

Synopsis:

```
-getpubjvmopts [-mgmtsvrfile <file>]
```

Description:

This command will print the current JVM options for the publication server.

Example:

```
java -jar edb-repcli.jar -getpubjvmopts -mgmtsvrfile ./msvr.prop
```

Subscription Operations

The following are the command line options for various subscription related operations:

5.26 Start Subscription Service

Synopsis:

```
-startsubservice [-mgmtsvrfile <file>]
```

Description:

This command will start the subscription service. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -startsubservice -mgmtsvrfile ./msvr.prop
```

5.27 Stop Subscription Service

Synopsis:

```
-stopsubservice [-mgmtsvrfile <file>]
```

Description:

This command will stop the subscription service. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -stopsubservice -mgmtsvrfile ./msvr.prop
```

5.28 Add Subscription Database

Synopsis:

```
-addsubdb [-mgmtsvrfile <file>] [-dbtype <oracle|enterprisedb>] [-dbhost
<host>] [-dbport <port>] [-dbuser <user>] [-dbpassword <encPass>|-dbpassfile
<file>] [-database <database|sid>]
```

Description:

This command will add a subscription database. It takes the path to the management server authentication details file. -dbtype specifies whether the database is Oracle or EnterpriseDB. It is followed by various arguments for the database such as host, port, user and database name (in case of EnterprsieDB) or SID (in case of Oracle). It will print the database ID of a newly added database. This database ID may be used by other command line options.

Example:

```
java -jar edb-repcli.jar -addsubdb -mgmtsvrfile ./msvr.prop -dbtype
enterprisedb -dbhost 127.0.0.1 -dbport 5444 -dbuser hr -dbpassfile
./subdbencpass.txt -database hr
```

5.29 Print Subscription Database IDs.

Synopsis:

```
-printsubdbids [-mgmtsvrfile <file>]
```

Description:

This command will print the IDs of all databases which are registered with the subscription service. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -printsubdbids -mgmtsvrfile ./msvr.prop
```

5.30 Print Subscription Database IDs Details

Synopsis:

```
-printsubdbidsdetails [-mgmtsvrfile <file>]
```

Description:

This command will print the details of all databases which are registered with the subscription service in the form of id:host:port:database:user. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -printsubdbidsdetails -mgmtsvrfile ./msvr.prop
```

5.31 Remove Subscription Database

Synopsis:

```
-removesubdb [-mgmtsvrfile <file>] [-subdbid <id>]
```

Description:

This command will remove a subscription database whose ID is specified. It takes the path to the management server authentication details file.

Example:

```
java -jar edb-repcli.jar -removesubdb -mgmtsvrfile ./msvr.prop -subdbid 1
```

5.32 Create Subscription

Sypnosis:

```
-createsub <subname> [-subdbid <id>] [-mgmtsvrfile <file>] [-pubmgmtsvrfile
<file>] [-pubname <pubName>]
```

Description:

Creates a subscription specified by a subscription name. A database ID must be specified under which the subscription will be created, followed by the path of the management server file that contains authentication information for the management server controlling the subscription service.

You must also specify the path of the management server file that contains authentication information for the management server controlling the publication service. Finally the publication name to which it needs to subscribe must be specified.

Example:

```
java -jar edb-repcli.jar -createsub sub1 -subdbid 1 -mgmtsvrfile ./msvr.prop
-pubmgmtsvrfile ./pubmsvr.prop -pubname pub1
```

5.33 Take Snapshot

Synopsis:

```
-dosnapshot <subname> [-mgmtsvrfile <file>]
```

Description:

Takes a snapshot (data copy) for a particular subscription.

Example:

```
java -jar edb-repcli.jar -dosnapshot sub1 -mgmtsvrfile ./msvr.prop
```

5.34 Do Synchronize

Synopsis:

```
-dosynchronize <subname> [-mgmtsvrfile <file>]
```

Description:

Performs synchronization (transnational changes replication) on the specified subscription.

Example:

```
java -jar edb-repcli.jar -dosynchronize sub1 -mgmtsvrfile ./msvr.prop
```

5.35 Remove Subscription

Synopsis:

```
-removesub <subname> [-mgmtsvrfile <file>]
```

Description:

Removes the given subscription.

Example:

```
java -jar edb-repcli.jar -removesub sub1 -mgmtsvrfile ./msvr.prop
```

5.36 Configure Schedule

Synopsis:

```
-confschedule <subname> [-mgmtsvrfile <file>] [-remove] | [[-jobtype <t|s>]
[[-realtime <noOfSec>] | [-daily <0-23> <0-59>] | [-weekly <MON,TUE, ...,
SUN> <Hour: 0-23> <Minute: 0-59>] | [-monthly <JAN,FEB, ..., DEC> <Day: 1-31>
<Hour: 0-23> <Minute: 0-59>] | [-cronexpr <”expression”>]]]
```

Description:

This command will configure the scheduler to fire the replication job at the specified time.

Example:

```
#Configure synchronize job scheduling in realtime with a delay of 10 seconds

java -jar edb-repcli.jar -confschedule sub1 -mgmtsvrfile ./msvr.prop -jobtype
t -realtime 10

#Configure snapshot job scheduling on weekly basis on Mon and Wed at 13:10

java -jar edb-repcli.jar -confschedule sub1 -mgmtsvrfile ./msvr.prop -jobtype
s -weekly MON,WED 13 10

#Configure snapshot job scheduled to fire 12pm(noon) every day.
```

```
java -jar edb-repcli.jar -confschedule sub1 -mgmtsvrfile ./msvr.prop -jobtype
s –cronexpr “0 0 12 * * ?”

#Remove already configured job

java -jar edb-repcli.jar -confschedule sub1 -mgmtsvrfile ./msvr.prop -remove
```

5.37 Save Subscription JVM Option

Synopsis:

```
-setsubjvmopts [-mgmtsvrfile <file>] {-append} [-jvmoption <file>]
```

Description:

This command will save the JVM options for the subscription server. If the -append argument is specified, the JVM options will be appended. The jvmoption specifies a file name which has JVM options on each new line.

Example:

```
java -jar edb-repcli.jar -setsubjvmopts -mgmtsvrfile ./msvr.prop -append -
jvmoption ./subjvmopts
```

5.38 Update Subscription

Synopsis:

```
-updatesub <subname> [-mgmtsvrfile <file>] [-pubmgmtsvrfile <file>][-host
<ipaddress>] [-port <port>]
```

Description:

This command will update the specified subscription with the user supplied host and port. This command is useful if the IP address of the subscription service is changed.

Example:

```
java -jar edb-repcli.jar -updatesub sub1 -mgmtsvrfile ./msvr.prop –
pubmgmtsvrfile ./pubmgmt.prop -host 192.168.0.1 -port 9000
```

Appendix A. Definitions

CLI: Command Line Interface

RMI: Remote Method Invocation

GUI: Graphical User Interface

API: Application Programming Interface

DBA: Database Administrator