SYBASE®

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Users Guide

Sybase Aleri Adapter for Replication Server® 2.0

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Installing the Adapter

Install the Sybase® Aleri Adapter for Replication Server® software on the Sybase Aleri Streaming Platform and Replication Server workstations.

Two files are included in the Sybase Aleri Adapter for Replication Server package:

AleriAdapterForRepserver-v2.0.0_RSAdapter-Config	Contains the software for installation on the Sybase Aleri Streaming Platform workstation
AleriAdapterForRepserver-v2.0.0_RepServer-Config	Contains the software for installation on the Sybase Replication Server workstation

The files for Windows machines have a `.zip` extension. The files for UNIX/Linux machines have a `.tgz` extension.

1. Obtain the Sybase Aleri Adapter for Replication Server package for your operating system. Go to the Sybase SPDC site and download it or order a CD.

   The available packages are:

LINUX_AleriAdapterForRepServer-v2.0.0.tgz
Solx86_AleriAdapterForRepServer-v2.0.0.tgz
SPARC_AleriAdapterForRepServer-v2.0.0.tgz
Windows_AleriAdapterForRepServer-v2.0.0.zip

2. If you download the package, extract the contents of the zip file using **Winzip** (on Windows) or **gunzip** (on Linux or Solaris).
3. Copy the `AleriAdapterForRepserver-v2.0.0_RepServerConfig` zip file to the Sybase Replication Server workstation.
4. Go to the Sybase Aleri Streaming Platform workstation.
5. Start the Aleri Studio and click **Help > About Aleri Studio** to verify the version of the Sybase Aleri Streaming Platform.
   The Configuration Details screen should show version 3.2.1 and, more importantly, the JAR file name should be `com.aleri.vizualizer_3.2.1_b28192.jar` to show that EBF28192 has been applied.
6. Verify that JDK 1.6 is installed.
7. Verify that the PLATFORM_HOME and JAVA_HOME environment variables are set to the locations where the Sybase Aleri Streaming Platform and JDK respectively are installed.
8. Stop the Aleri Studio.

9. Extract the `AleriAdapterForRepserver-v2.0.0_RSAdapterConfig` zip file into the PLATFORM_HOME folder.

10. Verify that the following files have been extracted to the `PLATFORM_HOME/lib` folder:

`aarsLogging.properties`

`AleriAdapterForRepServer.jar`

`jTDS3.jar`

11. Verify that the following file has been extracted to the `PLATFORM_HOME/lib/connections` folder:

`AleriAdapterForRepServer.cnxml`

12. Go to the Replication Server workstation.

13. Check the Replication Server log's startup messages to verify that Sybase Replication Server 15.6 or 15.2 is installed.

14. Extract the `AleriAdapterForRepserver-v2.0.0_RepServerConfig` zip file into a temporary directory.

The following files are extracted:

`aars_funcstrings.sql`

`aars_errors.sql`

`aars_rs_errors.sql`

15. Apply these scripts to the Replication Server.
   a) `isql -Usa -SSAMPLE_RS -P -i aars_funcstrings.sql`
   b) `isql -Usa -SSAMPLE_RS -P -i aars_errors.sql`
   c) `isql -Usa -SSAMPLE_RS -P -i aars_rs_errors.sql`

Configuring the Adapter On The Replication Server Workstation

Set up the RepServer Adapter, schema and source location on the Replication Server workstation.

1. Set up the replication system according to the Replication Server documentation.

2. Using the Sybase **dsedit** utility, add an entry to the interfaces (`sql.ini`) file with the name of the Sybase Aleri Streaming Platform workstation name and the port used for the RS Adapter connection. This entry will be used to specify the **RSadapter data server name** and **TDS Port** in the RS Adapter configuration process. See the Sybase documentation for more information on modifying the interface or `sql.ini` files. For example, if the adapter and the Sybase Aleri Streaming Platform are on a workstation named sierra and the connection is to be made on port 5100,

```
[RSadapter]
query=TCP,sierra,5100
```

3. If you haven't already done so, define the user name and password.

```
create user rsuser
set password rspassword
go
```

4. Create the connection from the replication server to the adapter. Use the same server name you used in the previous step here (and later for the RS Adapter configuration). Log in to the replication server to create the RS Adapter connection. For example,

```
create connection to RSadapter.RSadapter
set error class to aars_error_class
set function string class aars_function_class
set username rsuser
set password rspassword
set batch to "off"
with dsi_suspended
go
alter connection to RSadapter.RSadapter
set replication server error class to aars_rs_error_class
go
```

To turn off minimal columns,

```
alter connection to RSadapter.RSadapter
set replicate_minimal_columns to 'off'
go
```

Note: Minimal columns should also not be used in the repdef.

To enable batching,

```
alter connection to RSadapter.RSadapter
 set batch to 'on'
```

```
alter connection to RSadapter.RSadapter
 set dsi_cmd_separator to ';'
go
```

The user name and password used for this connection must be defined within the
replication server. This user name must not be the same as that of the Adapter admin user.

5. Create the replication definitions. A replication definition specifies the schema and the
source location for a given table or stored procedure. Log into the replication server to
create the sample TEST replication definition.
For example, for a source table 'TEST' (`create table TEST (ID int, FNAME
char(15))`) that has been defined on a sourcedb database located on an ASE server
named ASEHOST.

```
create replication definition TESTrep
with primary at ASEHOST.sourcedb
with all tables named 'TEST'
(ID int, FNAME char(15))
primary key (ID)
go
```

6. Mark the ASE source 'TEST' table for replication. Log in to the ASE server and locate the
source table 'TEST' and execute the following command:

```
sp_setreptable 'TEST', true
go
```

7. Define the subscriptions. Each subscription defines a target for the data changes coming
through the replication server. In the following example, the target is the RSadapter
connection for the RS Adapter located on the Sybase Aleri Streaming Platform
workstation. Log in to the replication server to create the sample TEST subscription:

```
create subscription TESTsub
for TESTrep
with replicate at RSadapter.RSadapter
without materialization
go
```

Configuring the Adapter On A Sybase Aleri Streaming Platform Workstation

Set up the RepServer Adapter, data model and data location on the Sybase Aleri Streaming Platform workstation.

1. Start the Aleri Studio (to finish the configuration process using this interface):

Options	Description
On Windows	Click **Start** > **All Programs** > **Aleri** > **AleriStudio**
On UNIX/Linux	Enter `$PLATFORM_HOME/bin/sp_studio`

2. Define a new data model (for example TESTmodel) using the Visual Editor. From within the Aleri Studio, select **File > New File > Data Modeling Using Visual Editor**.

3. Define a Data Location for the RS Adapter.

   a) Select the Data Location Explorer tab from the left pane of the data model (it looks like a database cylinder).
   b) Right click on the new Data Model folder (TESTmodel).
   c) Select Create Data Location. The Edit Parameters panel is displayed.
   d) Optionally, provide a data location Name.
   e) Select the "…" button for the "Type" field. The "Select Connection" panel is displayed.
   f) Locate and select the "Replication Server Input Connector" from the connection Type list.
   g) Select the "Basic" tab and configure the data location parameters used to connect to the RSSD and obtain metadata on tables and stored procedures as follows:

Parameter	Description
RSSD host	Specify the host name or IP address of the RSSD server.
RSSD port	Specify the port to use on the server containing the RSSD database.
RSSD database name	Specify the name of the RSSD database created by the replication server to store replication information.

Parameter	Description
RSSD user name	Specify the user name used to connect to the RSSD server during Discovery. This user must have permissions to run the RSSD Stored Procedures.
RSSD password	Specify the password for the RSSD user.
RSadapter data server name	Specify the data server name and database name used to define the replication server connection that points to the RS Adapter within the Sybase Aleri Streaming Platform. This server name is also used to define an entry in the replication server's interfaces (sql.ini) file. This value should be used for both the "data server" and "database name" portions of the replication server connection definition.

4. Select the "Advanced" tab and configure the data location parameters for runtime processing and internal communications as follows:

Parameter	Description
Stored proc stream operation	Specify whether an insert or upsert operation is performed with stored procedure replication. Defaults to insert.
TDS Port	Specify the port used by the Adapter. This is the port to which the replication server connection definition must connect. This port is defined within the interfaces (`sql.ini`) file on the replication server workstation to define connectivity between the replication server and the Adapter.
Adapter admin user	Specify a user name for the Adapter to use for internal communications. This user can be anything except it must not match the user defined within the replication server connection definition.
Adapter admin password	Specify a password associated with the user name the Adapter uses for internal communications.
Hot spare host	Specify the backup host if using a high availability HA configuration.
Hot spare port	Specify the port to use on the backup host if using an HA configuration.

Parameter	Description
Transactional Stream Operations	Specify whether or not Aleri data changes are in an Aleri transaction. Because this causes changes to be committed to a log store immediately after the transaction, this parameter should be set to true when using a log store for a persistent **rs_lastcommit**.
Batched stream operations	Specify whether or not the RS Adapter sends data to the Sybase Aleri Streaming Platform in batches.
Batch size	If the **Batched Stream Operations** parameter is set to true, specify the number of rows in the batch.
Publish when batch is full	If set to true, the Adapter writes data to the stream when the batch reaches **Batch size**. If set to false, the Adapter waits for a commit to write data to the stream.
Error on Missing Stream Column	Set to true to send an error back to the replication server if a column in the repdef is not defined within the stream. Setting this parameter to false (to avoid frequent disconnections from the replication server) is recommended.

5. Select OK to save the Data Location configuration.

6. Discover the source tables/procedures. The Discovery process establishes a connection to the replication server RSSD database and reveals defined subscriptions that target the RS Adapter. These subscriptions may include both tables and stored procedures.

   a) Right click on the RSAdapter data location from the Data Location Explorer tab and run Data Discovery. This will return a list of tables or stored procedures that have RS Adapter subscriptions associated with them. It also returns the rs_lastcommit table.

   b) Drag discovered "tables" to the visual panel on the right to create the source streams and columns.

   c) Define Primary Keys. Each table/stored procedure stream must contain at least one primary key. It is recommended that this key match the primary key defined in the replication definition. Locate the appropriate primary key column and click on the toggle key to the left of it. The toggle key will change to an image of a key.

   Discovery adds a special column named 'ra_pkey' to the stream definition for a stored procedure. The 'ra_pkey' column must be set as the primary key and 'Autogen' set to true for stored procedures.

   d) Select **File > Save** to save the changes.

7. Test data movement to the Aleri stream. Use the Aleri Studio for the following steps unless otherwise noted.

a) Open the data model within the Aleri Studio.
b) Go to the Run-Test tab.
c) Click on the green Run arrow to start the model. A successful startup displays a message similar to the following on the console.

    Stream TEST is ready for RepServer connections.
d) Log in to the replication server and resume the RS Adapter connection as shown in the example below:

```
resume connection to RSadapter.RSadapter
go
```
e) Insert sample data into the source table.
f) Verify the replicated data reaches the Aleri RS Adapter stream using the Aleri Studio Streamviewer.

Defining a Persistent rs_lastcommit

By default, the rs_lastcommit table is non-persistent: it is held in memory and cleared when the stream is shut down. This results in a full replay of all remaining items within the replication server when the stream is restarted. We recommend making rs_lastcommit persistent to minimize the replay of transactions following a stream restart.

1. Add a log store to the model.
   a) Open the **Palette** tab of the model and expand **Shared Components**.
   b) Select the **Log Store** component to add it to the model.
   c) Set the **Kind** parameter to "log".
   d) Set the **File** parameter to "rs_lastcommit".
2. Add rs_lastcommit to the model.
   a) Open the Data Location Explorer tab.
   b) Drag the rs_lastcommit table from the Data Discovery view into the model workspace.
   c) Set the "origin" column as the primary key.
3. Configure rs_lastcommit to use the persistent log store.
   a) Open the pop-up list for the **store** parameter.
   b) Select the Log Store you just added to the model.

Defining a Persistent rs_lastcommit

Performance Tips

Modify the system configuration to improve performance.

- Configure the Replication Server to use batches (terminator must be a semicolon).
- Configure the Replication Server to use larger packets: 4096 is probably a reasonable setting.
- Run on a 64-bit machine.
- Set all log levels to info or lower in the `aarslogging.properties` file.

Supported Datatypes

Map ASE/Replication Server datatypes to Aleri datatypes.

Aleri Datatype	ASE/Replication Server Datatypes
int32	smallint, tinyint, int, bit
timestamp	datetime, time
date	date, smalldatetime
int64	bigint, unsigned bigint, unsigned int, unsigned smallint
string	binary, char, unichar, nchar, nvarchar, varbinary, univarchar, varchar, time-stamp
double	numeric, float, real
money	money, smallmoney

Supported Datatypes