LDP6 Workshops

Pre-requirements

LDP hub has been created and the environment is up and running.

The hubowner user has been created with the password of Hvr1234567890.

This is the user account that all the students will log in as

Oracle, MariaDB and PostgreSQL have been installed and running.

Each student has been given two URL links. One link that has port 8080 which will take the students to the LDP splash screen login.

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The second URL link that has port 8081 will take the students to the VNC viewer page. This page will be used to start HammerDb for running a load and executing scripts needed for the workshops.

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**Workshop1**

**More on this workshop**

**LDP was designed to make it easy and seamless to get replication up and running between sources and targets. To do this LDP will walk you through from start to finish on getting a channel running.**

**It will start by asking you for a channel name and description. It will also want to know what type of channel this will be. From there it will walk you through setting up your locations and associating them as either the source or the targets. You will then choose what tables need to be replicated and then finally, LDP will activate the channel, start the capture job, refresh the target locations, and finally start the integrate job.**

**With this in mind, let’s get a better understand of some of the LDP terminology.**

**Channels - A channel is a group of locations and their tables/files that are involved in replication. You can have many locations in a channel acting as either a source or a target. You can also have more than one channel, grouping related objects into their own channels. For example, you could have a channel that has all HR related tables in it and a sales channel that groups all the sales tables together.**

**Locations – These are the end points of the source or target. They can be either a database or a file/directory.**

**Actions - Actions in LDP allow you to define the behavior of replication. When a replication channel is created, at least two actions - Capture** **and Integrate must be defined on source and target locations respectively to activate replication.**

**More on the hub**

**The LDP hub is an installation of LDP on a server machine (hub server). The LDP hub orchestrates replication in logical entities called channels. The hub machine contains the LDP hubserver, hubs, Scheduler, Log Files, and Router Files.**

**The LDP hubserver is connected to through a thin client from a supported browser. You can have more than one hub, for example you can have a hub for Development, one for UAT and one for Production. For these workshops, the LDP hubserver has been created for you.**

**LDP will walk you through the creation of a new channel from start to finish.**

**This will include,**

**Selecting the channel type**

**Selecting and setting up the locations**

**Configuring the channel**

**Activating the channel**

**Refreshing the targets**

**Starting the replication jobs.**

1. Logging into the LDP hub
   * 1. *Enter* the link you were supplied with the port 8080 into a web browser.
     2. *Enter* hubowner for the user and Hvr1234567890 for the password. Click the blue Log in button.

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* + 1. When you log into the hub for the first time, you will be presented with a screen to start setting up a replication channel.

*Click* in the blue “Create New Channel” button.

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1. Creating a channel

Your environment consists of a source Oracle database and both a PostgreSQL and MariaDB databases for targets.

1. On the page that is presented, you will name and create the new channel. On the left side is where you will enter the name and an optional description. The middle area is where LDP will guide you in building out your channel.

You are presented with four possible channel types. One to One, One to Many, Many to One and Multidirectional. For this exercise we will create a One to Many channel.

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For the Channel name enter *ora2mdbpg* and for a description enter *Oracle to MariaDB and PostgreSQL*

*Click* in the one-to-many box to be taken to step 2 select locations

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1. In this step we will set up our source and target locations.

*Click* on the “Create New Location*”* button under the Source Location box.

Graphical user interface, text, application, email

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This will bring up the available source locations.

*Click* on the Oracle tile.

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This will bring you to step 2 the Select Agent Connection.

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*Check* the circle under the “Connect via High-Volumn Agent”.

We are not using a RAC cluster so make sure the circle Regular connection is selected.

In the AGENT HOST box enter “oracle”

In the AGENT PORT enter “*4343”*

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*Click* on the Configure Agent Service button.

Graphical user interface

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This will bring up another window where you will configure the agent. Confirm the Agent Host and Agent Port are correct. Make sure the “All connections require an agent user” is chosen.

*Click* in the blue “Add User” button.

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In the next window

enter “*demo”* for the agent user and “Hvr1234567890” for the password.

*Click* the blue “Save” button.

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You will now see the demo user listed as an Agent User

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*Click* the blue “Save Agent Service Configuration” button which will take you back to the New Location window.

*Click* on the blue Confirm Connection Method button.

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This will take you to step 3 of the new location set up.

This step will configure the connection to the source Oracle database.

Enter the following information.

*Click* the drop-down arrow under the “ORACLE \_HOME” section. This will show you the ORACLE\_HOME for the database. Select it.

Graphical user interface

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Make sure “Local Connect to database” is selected.

*Click* on the drop-down arrow and the oracle SID “XE” should show up. Select it.

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*Enter* *tpcc* for the username and *tpcc* for the password

*Click* the blue “Confirm Connection Details” button

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In step 4 you will setup the type of capture method.

The top choice “Direct Redo Access” should be already selected. If not select it.

*Click* the blue “Confirm Capture” button

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To finish up the capture location setup, we will name it and give it a description.

*Enter* “oracle”for the location name and “Oracle source database” for the description.

*Click* the blue “Save Location” button at the bottom.

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This will take you back to step 2 of the “Select Locations” screen where you can see the oracle chosen as your source database and the Oracle location as the source on the left side topology pane.

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1. The next part will be to set up the PostgreSQL target. The process is the same as it was for the Oracle location.

*Click* in the “Create New Location” box under the “Target Location” which will bring up the “Select Location Type” screen.

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Choose PostgreSQL

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*Chose* “Connect directly from hub.”

*Click* the blue “Confirm Connection Method” button.

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Under step 3, “Configure Location Connection.”

*Enter “*postgres” for the HOST entry.

Leave Port entry as 5432.

For the DATABASE, enter “pg”

For the USER, enter “postgres”

For the PASSWORD, enter “hvr”

Click on the blue “Confirm Connection Details” box.

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For step 4 “Configure Integrate for PostgreSQL Location”

*click* in the blue “Confirm Integrate” box making sure all the choices except “Test connection before confirming” are unchecked.

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Enter *postgres* for the location name and *PostgreSQL* for the description.

*Click* the blue “Save Location” box.

A picture containing graphical user interface

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You will now see both the source Oracle and target PostgreSQL locations created.

1. We will now add our last location, MariaDB. This is the same process we followed when setting up the PostgreSQL location.

Under the Target Locations box, once again you will select the “Create New Location” button.

*Click* the “Create New Location” button.

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*Choose* the MariaDB location tile

Text

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Make sure the “Connect directly from hub” is selected.

*Click* the blue “Confirm Connection Method” button.

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Again, in step 3 we will setup the database specific information

*Enter “*mariadb” for the HOST.

Leave Port entry as 3306.

For the DATABASE, *enter* “maria”

For the USER, *enter* “root”

For the PASSWORD, *enter* “hvr”

*Click* on the blue “Confirm Connection Details” box.

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In our last step, step 4, the Configure Integrate for MariaDB location, we will be using a staging directory. Using a staging directory will provide optimum load performance.

The “Integrate Staging Directory” box should be checked. If not check it

*Click* on the folder browse button on the right of the “Staging Directory”

*select* “Home” on the top left of the popup window. You will see populated on the top bar “/home/hvr”

*Click* the blue “select” button on the bottom right of the window.

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*Click* the blue “Confirm Integrate” button.

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*Enter “*mariadb” for the location name.

Enter “MariaDB target location” for the description.

*Click* the blue “Save Location” button.

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Now that all environments have been setup,

*click* on the blue “Confirm Locations” box.

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1. Under step 3 of the “Configure Channel” make sure the “Standard Replica” box is checked. C*lick* the blue “Save Channel and Continue” box.

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1. Now is the time to select the tables that will be used for replication.

*Click* the blue “Select Tables” button.

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This will bring up the tables that are in the schema tpcc that we chose when we setup the oracle location.

*Check* all the table boxes so that all the tables are select. Alternatively, you could check just the “NAME” box which will also select all the tables.

*Enter* “DEMO” for the Group name in the lower right box.

*Click* the blue “Save” button.

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*Click* on the blue “Confirm” button to be taken to the final step.

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1. The last step is now to activate, Refresh the Data to the targets and start the replication jobs.

This step will activate the replication by creating the objects and job components needed for capture and integrate to run. This step will also then refresh the data into the target databases using a bulk load method. If the tables do not exist, then LDP will create them first. Finally, this step will then start the jobs for replication. At the end of this step, you will have a running channel that will be replicating data from the source database to the two targets.

Make sure the “Activate replication”,” Refresh Data into Target” and “Start Replication Jobs” are all checked.

*Click* on the blue “Complete Channel Creation” button.

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This will take a minute or two to run but once completed you will have a running channel. There may show up a red activate message. You can refresh your browser and it will go away.

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1. Starting HammerDb to simulate a load.

To start a simulated load on the source database, you need to start HammerDb which is located on the second URL link you were provided that is using port 8081.

*Open* the VNC viewer page by copying and pasting the link in a web browser.

*Click* the blue “Log On” button.

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An access key has already been entered.

*Click* the white “Connect” button to complete the login.

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This will take you to the Desktop where HammerDb is located at.

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*Double click* the HammerDB desktop icon to start the simulated load.

Logo

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Graphical user interface, text, application

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*Return* to the LDP webpage and after a minute or two, on the right side of the page in the “Integrated Changes (split by table)” chart you will start to see that data is now moving across the replication environments you created.

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Your replication channel is now complete with data flowing from the Oracle source to both the MariaDB and Postgres targets.

1. While on the LDP webpage, it is possible to view the locations that have been created. This can be done by navigating to the channel locations page.

*Click* on the cylinder icon in the navigation bar on the left side of the LDP webpage.

Application, icon

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This will take you to LDP’s locations page. It is here where you can see all the locations that have been created for this hub. You can also add locations from this page as well.

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*Click* on the oracle location name and you will be taken to the details of that location. From there you can edit the location or test the connection to make sure it’s valid or add the location to an existing channel.

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1. With locations created and channels running, there will come a time when you need to see what tables are in what channels. LDP makes it possible to see those tables in a channel. To do this you need to get to the tables webpage.

*Click* on the table icon from the navigation bar on the left side of the webpage.

![Icon

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This will take you to the “Table in all channels” page. It is here that you can see what tables are in what channels.

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Across the top is a series of drop-down menus that allow you to filter the results to focus in on just what you need to see. From here you can also see the details of a table.

*Click* on the blue “history” table name. This will bring up the details of that table. You can also see a history of compares and refreshes from this page.

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**CONCLUSION**

In this workshop, you were introduced to LDP’s User Interface. Through a guided process LDP took you through a complete channel setup which included creating a channel, locations, choosing tables, activating, and starting replication. You were also shown how to see the details of a channel, a location, and the tables in replication.