Introduction

EASYLABEL has several features for saving the history of label formats. This history can include information about when label formats were edited and printed. In order to save this history, EASYLABEL needs a connection to an SQL Database Server. The most common setup is a group of networked computers that update a central database. Authorized users can then view the history from any computer that can access the database. The EASYLABEL history database can be created on an existing Microsoft SQL Server or Microsoft SQL Server Express installation. You will need Administrator privileges to create the EASYLABEL database tables and users. The following instructions detail how to setup the history database and how to setup EASYLABEL to update the history database.

Microsoft SQL Server

Tharo Systems cannot give support on installing Microsoft Windows Server or Microsoft SQL Server. Talk with your IT Department or Network Administrator for help in getting the EASYLABEL History Database setup and accessible in your environment. Tharo provides an SQL script in the SQL folder on the DVD that can be used to setup the initial database and users. Network and user security for the EASYLABEL history database depends on your network environment, so this document only provides the basic information needed to perform the initial setup.

Installing Microsoft SQL Server 2016 Express

The EASYLABEL DVD contains an installer for Microsoft SQL Server 2016 Express Edition. The installer, which is named sql_server_2016_express_x64.exe, can be found in the SQL folder on the EASYLABEL DVD. You may choose to install a different/newer version of Microsoft SQL Server. These instructions are for the SQL Server 2016 Express included on the DVD. Other versions of SQL Server may have different sequences of steps during installation.

1) Start the installer executable sql_server_2016_express_x64.exe. You may see a "User Account Control dialog" or similar message asking if you want to allow this app to make changes to your PC. Click the "Yes" button to continue.
2) Choose a directory for the installation files to be extracted to and click "OK". You will see a progress bar while the files are extracted.
3) When file extraction is complete, you will see a screen with title "SQL Server Installation Center", click on "New SQL Server stand-alone installation or add features to an existing installation"
4) On the License Terms screen, if you accept the license terms, check the "I accept the license terms" box and then click the "Next" button.

5) On the "Install Rules" screen, you may get a warning about the Windows Firewall. We will correct this later in the section labeled "Configure Windows Firewall to allow remote connections". If the rest of the rules show a "Passed" status, click the "Next" button.

6) On the "Feature Selection screen", keep all 3 items checked then click the "Next" button.

7) On the "Instance Configuration" screen, make sure the radio button next to 'Named instance' is selected; you can optionally rename the instance name to any name you choose. For example let's use 'SQLExpress2016' as the instance name in the 'Named instance:' text box, then click the text box next to 'Instance ID:' the text in the box will be automatically changed to match the instance name 'SQLEXPRESS2016'. Click the "Next" button.

8) On the "Server Configuration" screen, change the Startup Type of SQL Server Browser from 'Disabled' to 'Automatic', so that it looks like the following:

Service	Startup Type
SQL Server Database Engine	Automatic
SQL Server Browser	Automatic

9) There is no need to check the checkbox "Grant Perform Volume Maintenance Task privilege to SQL Server Database Engine Service". Click the "Next" button.

10) On the "Database Engine Configuration" screen under "Authentication Mode": Select the radio button next to "Mixed Mode (SQL Server authentication and Windows authentication)". Enter/create and confirm the password the SQL Server system administrator (sa) account. If your Windows user name is not shown under 'Specify SQL Server administrators', you can click the 'Add Current User' button to add yourself to the SQL Server administrator group. Click on the "Next" button and the actual installation will begin.

11) On the "Complete" screen, if everything went smoothly, the Status of all Features should be 'Succeeded', click on the "Close" button.

12) Click X to close the "SQL Server installation Center". The installation of SQL Server 2016 Express is complete.

Creating the History Database

To create the EASYLABEL history database and associated tables:

1. Locate the CreateEASYLABELTables.sql file. This file can be located on the EASYLABEL DVD in the SQL folder, or if you have installed EASYLABEL it can be found in the 'Documents' folder in the directory you installed EASYLABEL in (default: "C:\Program Files (x86)\Tharo\EASYLABEL\Documents")

2. Find your computer name by going to Control Panel -> System and Security -> System.

3. Open a command prompt, and type in the following command. Be sure to replace each bracketed section <...> with actual value for your installation.

sqlcmd -S <your computer name>\<sql server instance name> -i <path to the SQL script>\ CreateEASYLABELTables.sql

Example: Your computer name is 'Myserver123', your SQL Server instance name is 'SQLExpress2016', and the file 'CreateEASYLABELTables.sql' is under the folder "C:\Program Files (x86)\Tharo\EASYLABEL 6.2.2.1864\Documents", then you should type in the following at the command prompt and then press the Enter key:

sqlcmd -S Myserver123\sqlexpress2016 -i "C:\Program Files (x86)\Tharo\EASYLABEL 6.2.2.1864\Documents\ CreateEASYLABELTables.sql"

4. If you see the following lines, the database was created successfully.

   Changed database context to 'TSEASYLABELHistory'.

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   Changed database context to 'master'.

Configure SQL Server to use static/fixed ports

1) Start the SQL Server Configuration Manager. You may see a "User Account Control dialog" or similar message asking if you want to allow this app to make changes to your PC. Click the "Yes" button to continue.
2) Expand "SQL Server Network Configuration" section by clicking on the ">" to the left of it.
3) Click on "Protocols for SQLEXPRESS2016"
4) Right click the TCP/IP protocol and select "Properties" from the pop-up menu.
5) On the "Protocol" tab make sure "Enabled" is set to "Yes".
6) Select the "IP Addresses" tab. Scroll down to the 'IPAll' section.
7) Set the "TCP Dynamic Ports" entry to be blank (remove the 0 if it's there) and then set the "TCP Port" to 1433.
8) Click on the "OK" button to close the TCP/IP Properties Window.
9) You will get a message stating the changes will be saved but will not take effect until the system is rebooted. Click "OK" to close the dialog box.
10) Click on the "X" to Close the "SQL Server Configuration Manager".
11) Reboot the system when convenient.

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Configure Windows Firewall to allow remote connections to the SQL Server

1) Go to Control Panel → System and Security→ Windows Firewall.
2) Click 'Advanced settings' on the left side to open the 'Windows Firewall with Advanced Security' window.
3) Click on 'Inbound Rules' to select it.
4) Click on 'New Rule...' on the right hand side of the window.
5) Click on the radio button next to "Port" then click on the "Next" button.
6) Make sure 'TCP' and 'Specific local ports' are selected.   Enter 1433 as the port number and click the "Next" button.
7) Make sure 'Allow the connection' is selected and click on the "Next" button.
8) The next screen allows you to specify which computer connection environments you want to connect to the SQL Database Engine. Check the appropriate selections and then click the "Next" button.
9) Type in a name for this rule and then click on the "Finish" button.
10) Follow steps 1-9 again to create a new rule for the SQL browser service on UDP port 1434.

Once this has completed successfully, the EASYLABEL history database (TSEASYLABELHistory) is ready for use.

The default history database user is named "tseasyuser" and the default login for that user is "tseasylogin" and the password is "TS1EASY#pass".

EASYLABEL Setup

The EASYLABEL history configuration is done through the "Settings" menu in EASYLABEL. Choose "Program Options…" from the "Settings" menu. Then click on the "History" tab in the configuration screen. The "History" screen has the option of enabling history logging, selection of the database to be updated, and several options that control the types of information that are logged. The logging selections are stored so that if history logging is disabled and then later re-enabled, all of the previous settings remain and do not have to be reentered.

The following options are available for the history logging:

- Enable History Logging
  If this option is set to "No" then no history is logged. Nothing will be written to the selected SQL database. Set this option to "Yes" to enable history logging. Then use the following options to control the types of history you want to be logged.
- Primary History Database
  Enter a connection string that points to the database containing the EASYLABEL history tables. If the Primary History Database is unavailable (because of server outage or network errors) then EASYLABEL will log history to the backup history database if one is defined. Use the "Prompt" button to bring up the database connection dialog. Follow the database connection dialog to select a database server, database name, and user name and password. Test the connection to

make sure all of the information is correct. To make future connections easier, so that you do not have to reenter the password, select the "Allow saving password" option.

- Backup History Database
  Enter a connection string that points to a secondary database containing the EASYLABEL history tables. If a Backup History Database is defined then EASYLABEL will log history data here when the Primary History Database is not available. If the primary database is on a network server it may make sense to have the backup database local on the computer running EASYLABEL. See the "Backup Server Settings" section below for an explanation of how to set this up.

- Log Job Details
  Set this option to "Yes" to log the information for all print jobs. This includes information such as: format name, date, time, user name, computer name, etc. This option is required before setting other print job logging options.

- Log Job Status
  Set this option to "Yes" to log the status updates for print jobs. This will log when the job is queued, when printing is started and ended, and any errors that may occur during the printing process.

- Log Label Data
  Set this option to "Yes" to log the label data for every printed batch of every print job. When this is used in conjunction with the "Log Label Format" option, it is possible to view and reprint any batch of any print job.

- Log Label Format
  Set this option to "Yes" to save a copy of the label format file for each print job. This will allow the Print History Console to display an image for a printed label. The label format file can also be saved if the original version is accidentally lost.

- Log Saving of Formats
  Set this option to "Yes" to log information about every save of a label format file. This allows for viewing the history of all changes to the label format.

- Log User Changes
  Set this option to "Yes" to log changes to EASYLABEL user profiles, such as the user description, access rights, etc.

Database Connection Strings

If you use the "Prompt" button for the Primary History Database or Backup History Database setting in the EASYLABEL history configuration, this will bring up a "Data Link Properties" window to create a database connection. This example we will show how to setup a connection to Microsoft SQL Server Express.

1) In the "Provider" window select "Microsoft OLE DB Provider for SQL Server" and then click the "Next" button.

2) In the "Connection" window part 1, enter the server name. As an example we use "VMWINXP\SQLEXPRESS", but you should enter your machine name to replace the VMWINXP part.
3) In part 2, select "Use a specific user name and password". The user name should be "tseasylogin" and the password is "TS1EASY#pass". These are the default user name and password created by the "CreateEASYLABELTables.sql" described above. Make sure to select "Allow saving password".
4) In part 3, select "TSEASYLABELHistory" as the database on the server. Click the "Test Connection" and you should see a message "Test Connection Succeeded". Then click the "OK" button.

Backup Server Settings

The backup SQL server is used in cases where the primary (usually centralized) SQL server is unavailable. A backup server will contain all of the history that could not be logged to the primary server. The backup database is automatically synchronized with the primary database the next time the connection to the primary is available. This generally happens the next time EASYLABEL is started. Once synchronization is complete, the backup database is cleared of any history. Please remember that the backup database DOES NOT contain a copy of all of the data in the primary database, it is simply a place to log history when the primary database cannot be accessed. The most common setup is a centralized network database server as the primary, and a local (on each client machine) backup database server. This section will describe the setup using a local SQL Express as the backup.

Install SQL Express as described in the section "Installing Microsoft SQL Server 2016 Express" above. Then follow the steps in the sections "Creating the History Database", "Configure SQL Server to use static/fixed ports", and "Configure Windows Firewall to allow remote connections to the SQL Server". This completes the configuration of the backup server to allow synchronization to the primary server. Make sure that the EASYLABEL configuration has connections for both the primary and backup server; see the section "EASYLABEL Setup" above for instructions on configuring the Primary and Backup databases in EASYLABEL.

One issue that needs mentioning is the fact that both the primary and backup database should have the same collation option. The collation for the history database defaults to the collation option for the server. The server collation is set when the server is installed, and depends on the regional and language options of the host operating system. The collation option for the database can be checked by using the server management studio. Select the TSEASYLABELHistory database, right-click on it and select "Properties". In the database properties, click on "Options" and verify that the "Collation" selected is the same for both the primary and backup databases. fdf