



Smart Reconfigurable Test Software Design Description

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1. Data Item Description

Revision History

Version	Status	Date	Author	Change Description
0.1	Draft	13/11/2019	S McMahon	Initial draft
0.2	Draft			Document Review
1.0	Release			

Purpose

Describe process of installing and running Smart Reconfigurable System project.

Stakeholders

Stakeholder should indicate their approval.

Position	Name	Date
Project Owner	Garret O'Doherty	

2. Contents

1. Data Item Description 2

Revision History 2

Purpose 2

Stakeholders 2

2. Mysql..... 4

3. Mysql

Download from

<https://dev.mysql.com/downloads/installer/>

Windows (x86, 32-bit), MSI Installer 8.0.18 415.1M

Download

(mysql-installer-community-8.0.18.0.msi) MD5: 906b5f84343d487f716f03b5925d8286



Install MySQL Server, Workbench and ODBC connector.

Add the following local user.

Username:

root

Password:

Tri,MMC,roo,

4. Add database for demo project

Launch MySQL Workbench

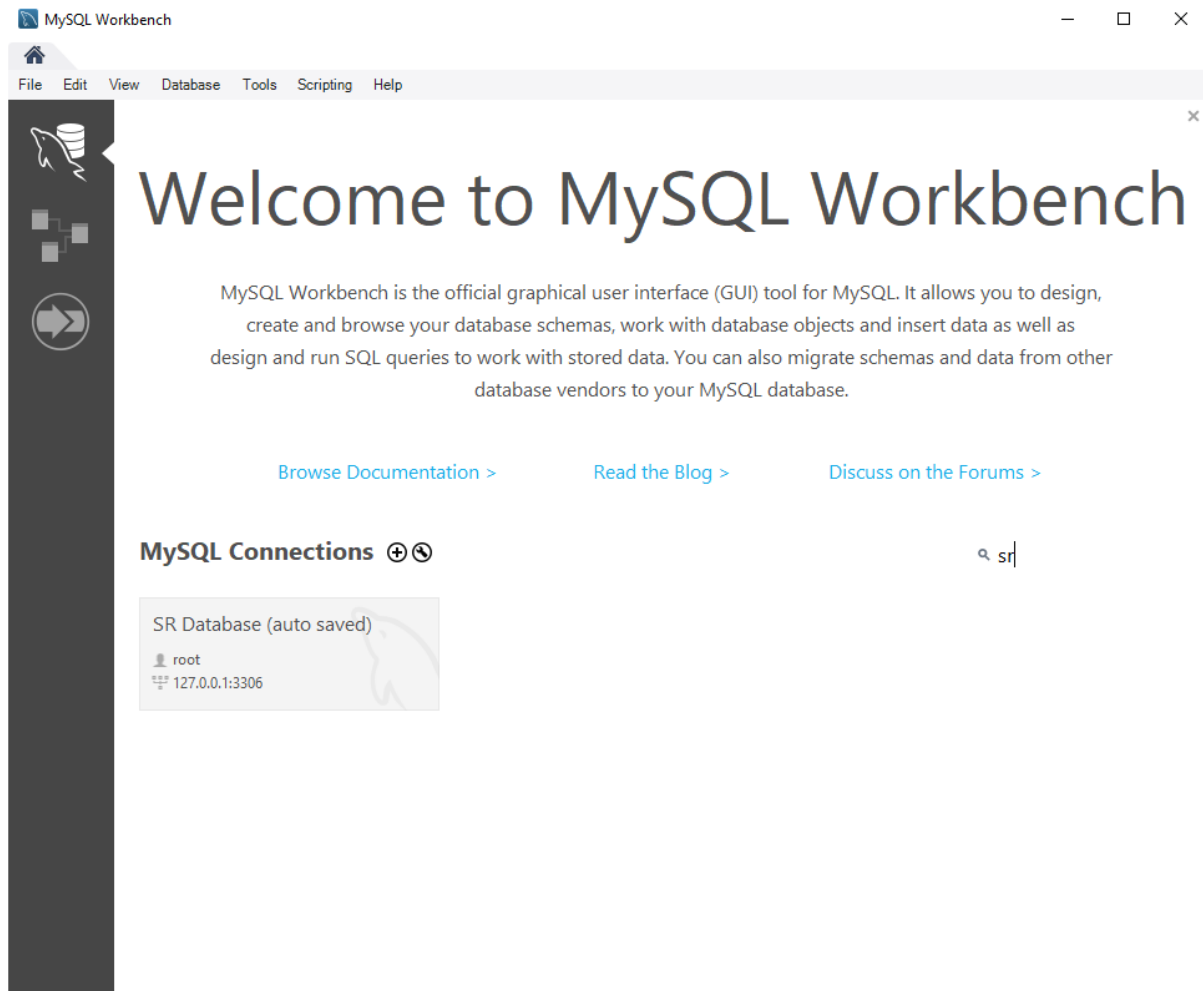


Figure 1 MySQL Workbench

Click the + button and enter the connection details as shown below:

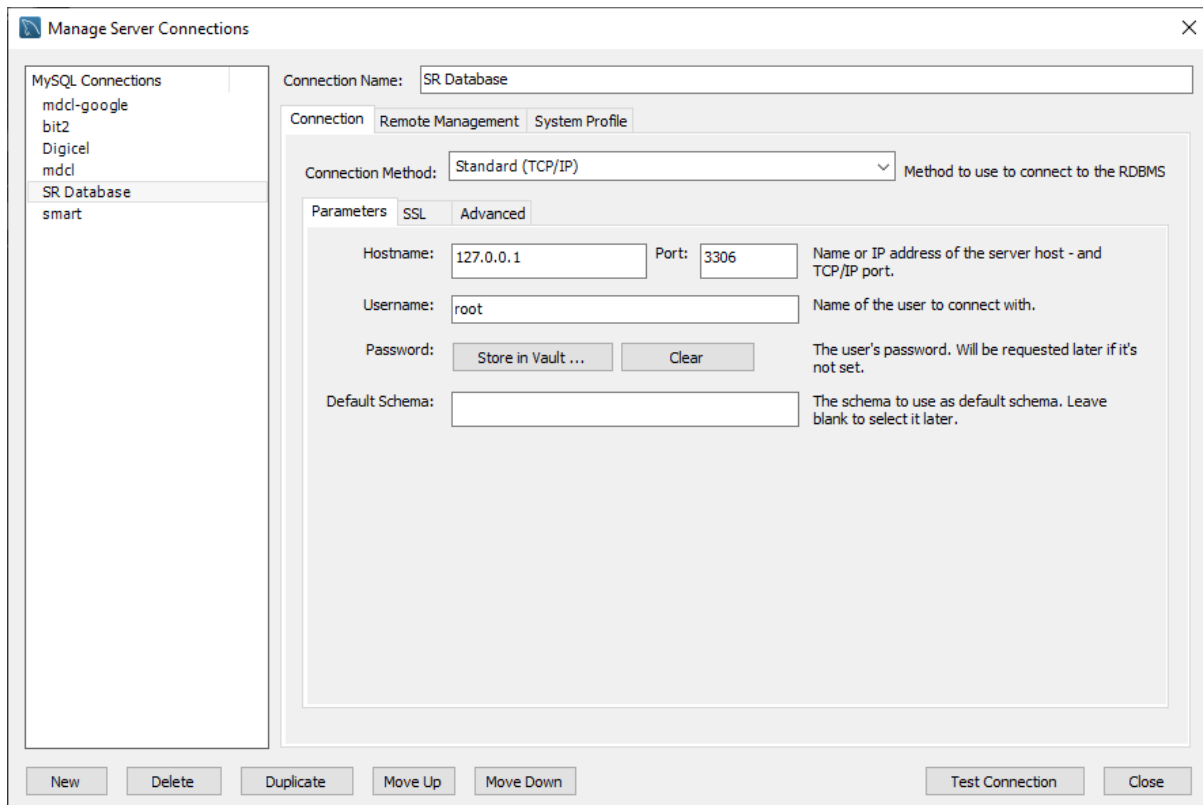


Figure 2 Connection details

Click test connection to display the follow popup:

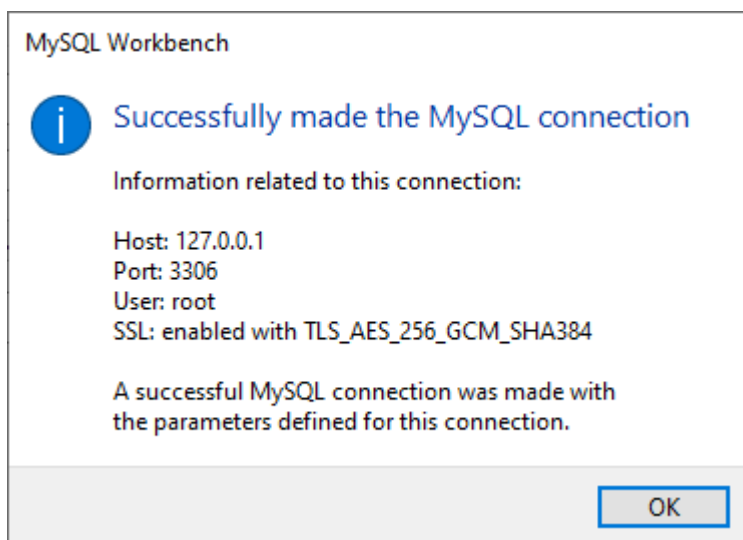


Figure 3 Connection success

Click close and then double click the new connection option on the landing page.

Copy and paste the following script in the Query window.

-- MySQL Workbench Forward Engineering

```
SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0;  
SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0;  
SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='TRADITIONAL,ALLOW_INVALID_DATES';
```

```
--  
-- Schema mydb  
--  
--  
-- Schema led  
--  
--
```

```
--  
-- Schema led  
--  
--
```

```
CREATE SCHEMA IF NOT EXISTS `led` DEFAULT CHARACTER SET utf8mb4 COLLATE  
utf8mb4_0900_ai_ci ;  
USE `led` ;
```

```
--  
-- Table `led`.`users`  
--  
--
```

```
CREATE TABLE IF NOT EXISTS `led`.`users` (  
  `username` VARCHAR(10) NOT NULL,  
  `password` VARCHAR(45) NULL DEFAULT NULL,  
  `role` VARCHAR(45) NULL DEFAULT NULL,  
  PRIMARY KEY (`username`))  
ENGINE = InnoDB  
DEFAULT CHARACTER SET = utf8mb4  
COLLATE = utf8mb4_0900_ai_ci;
```

```
SET SQL_MODE=@OLD_SQL_MODE;  
SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS;  
SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS;
```

Click the execute (lightning symbol) button.

5. Add Admin User

Next a user needs to be added.

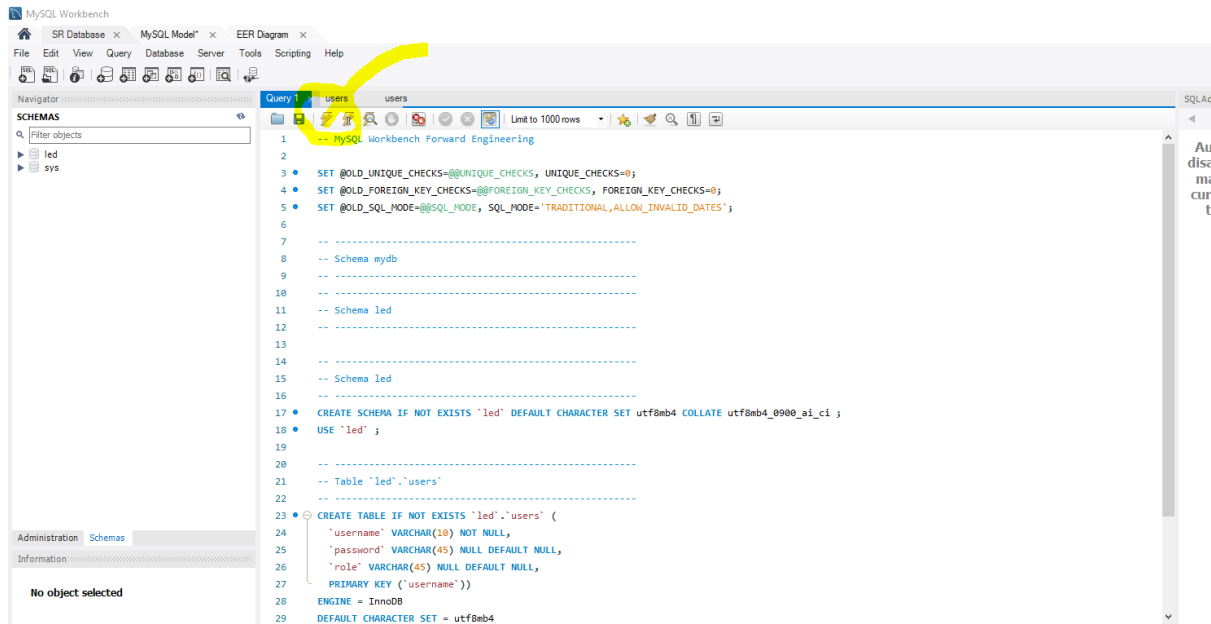


Figure 4 execute script

Add an admin user

```
INSERT INTO `led`.`users` (`username`, `password`, `role`) VALUES ('admin', 'admin1', 'admin');
```

There is now a database with a table called user and an admin entry. This demonstrates LCOD in the reconfigurable portion of the code.

6. Git

The code is available on GitHub and can be accessed with the username/ password provided by MMC.

An easy way of managing the code is with github for desktop, (<https://desktop.github.com/>). Download, install and sync with the private project repository (<https://github.com/seanjmcm/Trinity>)

7. SRS Launch

The project is significantly advanced given the short development time of just over 2 days. The project demonstrates the proposed LCOD based Smart Reconfigurable architecture.

It is exciting to see it operational!

To launch, first open the project : SR System.lvproj then launch SR Test Launcher.vi

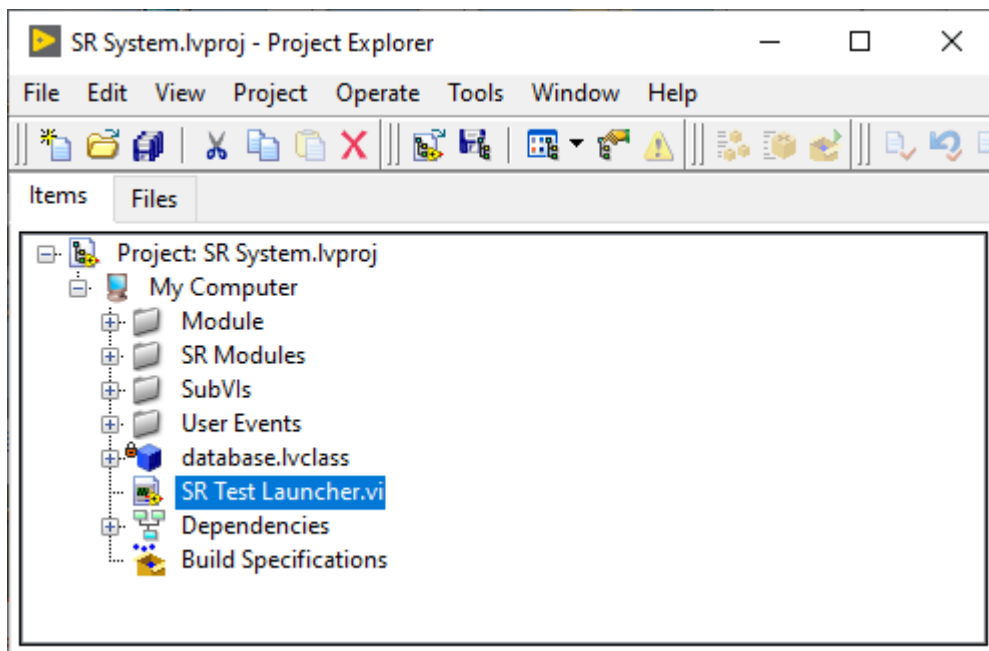


Figure 5 LabVIEW Project

Once launched click the run button to view the project.

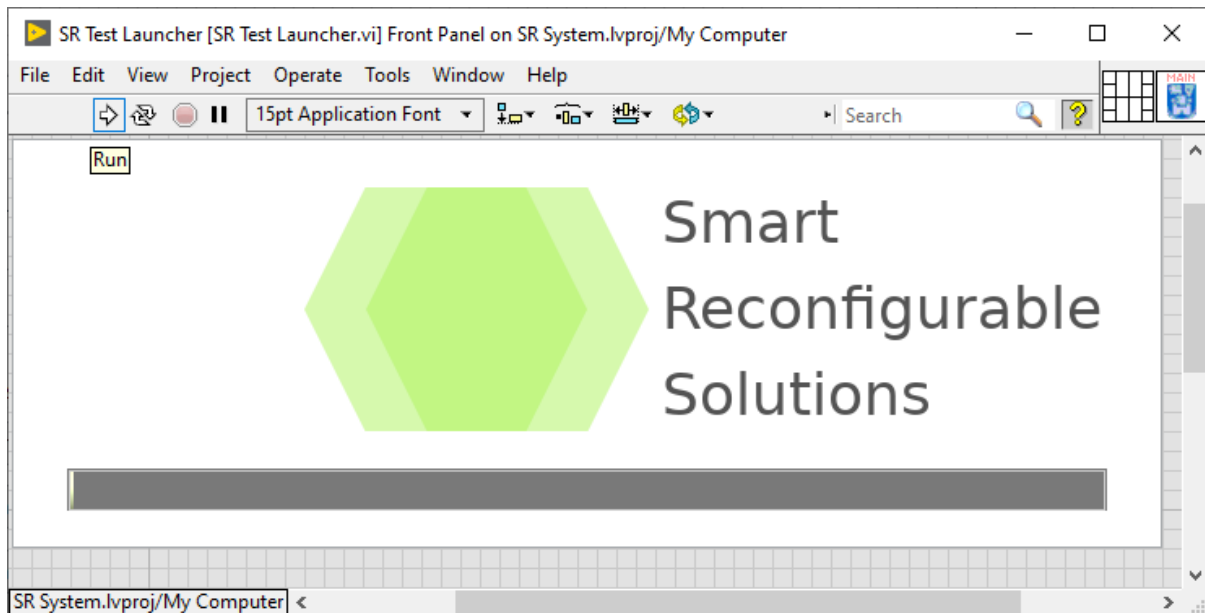


Figure 6 SR Test Launcher

The settings can be accessed and altered in the setting folder.

[TestPlan]

Current Consumption = "TRUE"

Emission Spectrum = "TRUE"

[Instruments]

Resistor 1 = "1600.000000"

Resistor 2 = "390.000000"

Resistor 3 = "190.000000"

[Limits]

Current 1 = "5.000000"

Current 2 = "20.000000"

Current 3 = "40.000000"

Tolerance = "10.000000"

Wavelength = "640.000000"

[Settings]

VLED 1 = "2.000000"

VLED 2 = "2.200000"

VLED 3 = "2.400000"

Source V = "10.000000"

Result Path = "/c/temp"

8. Addendum

These are exciting first steps on the road to a full featured reconfigurable system.

It is not possible to complete such a vision in three days but with further and a focus on a particular sector, this vision when realised could become a leader in the sector and yield significant revenue for a company that were to market and sell this product.