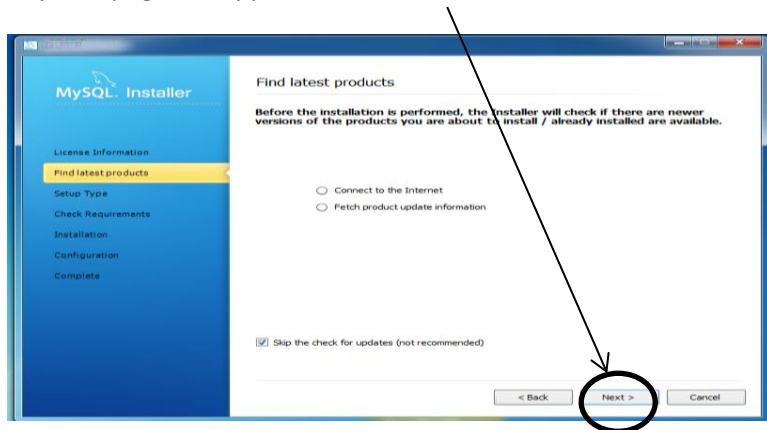


MySQL Installer Program/Tool

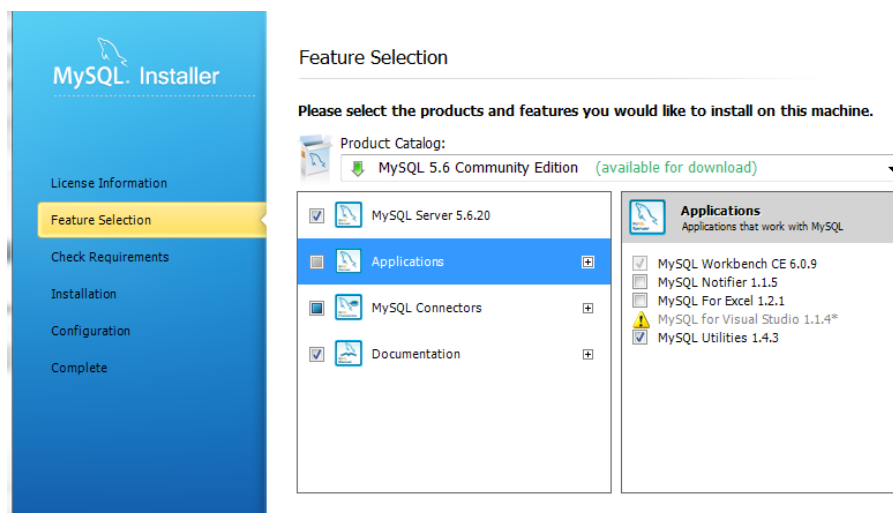
The MySQL version 5.6 has a new Installer program. It contains some aspects of server configuration (i.e. it performs an installation and some initial configuration. All MySQL versions also have a Instance Configuration Tool that you can modify and manage an installation once it is installed.

The installer may ask to check for latest products/updates etc. As our Vlabs have no internet access skip this page if it appears. **Select Next**



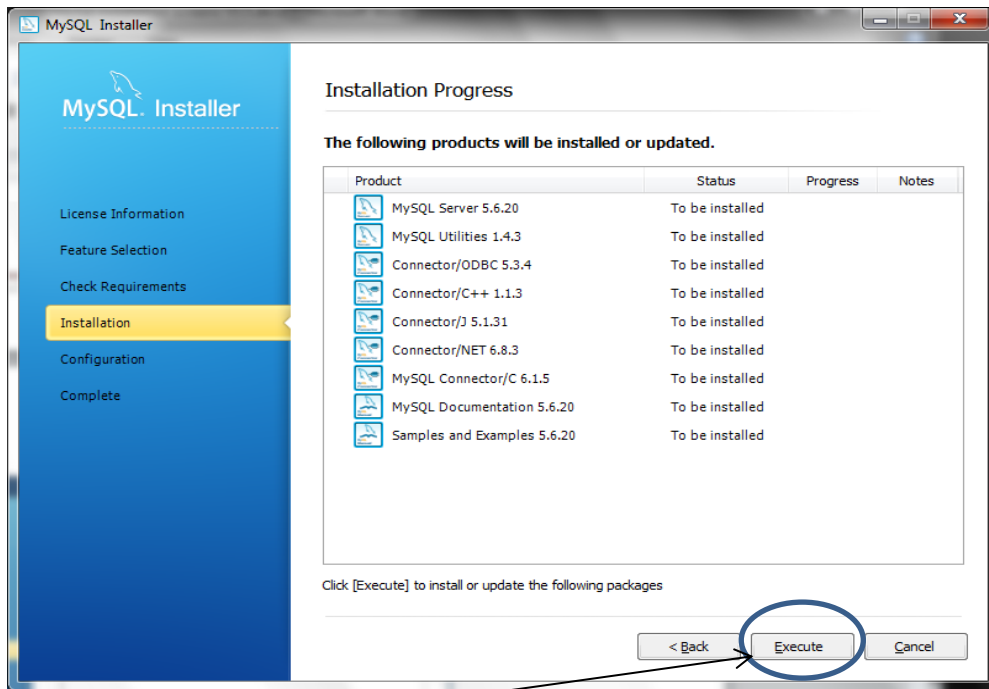
If you see a page for Licence terms, then Accept then and select Next

This section relates to the different programs available in the MySQL suite. The installer customises the installation for only the programs (modules of the DBMS) they need for the application.

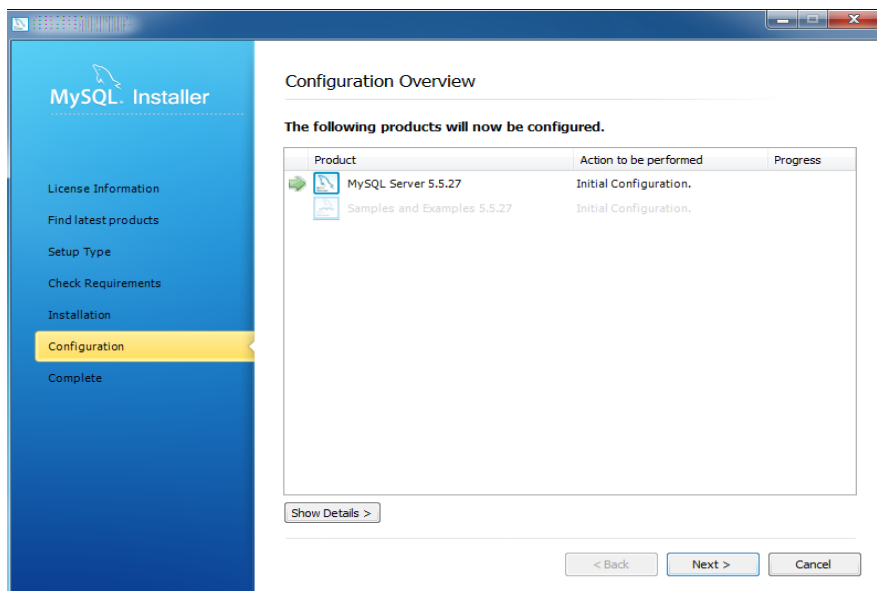


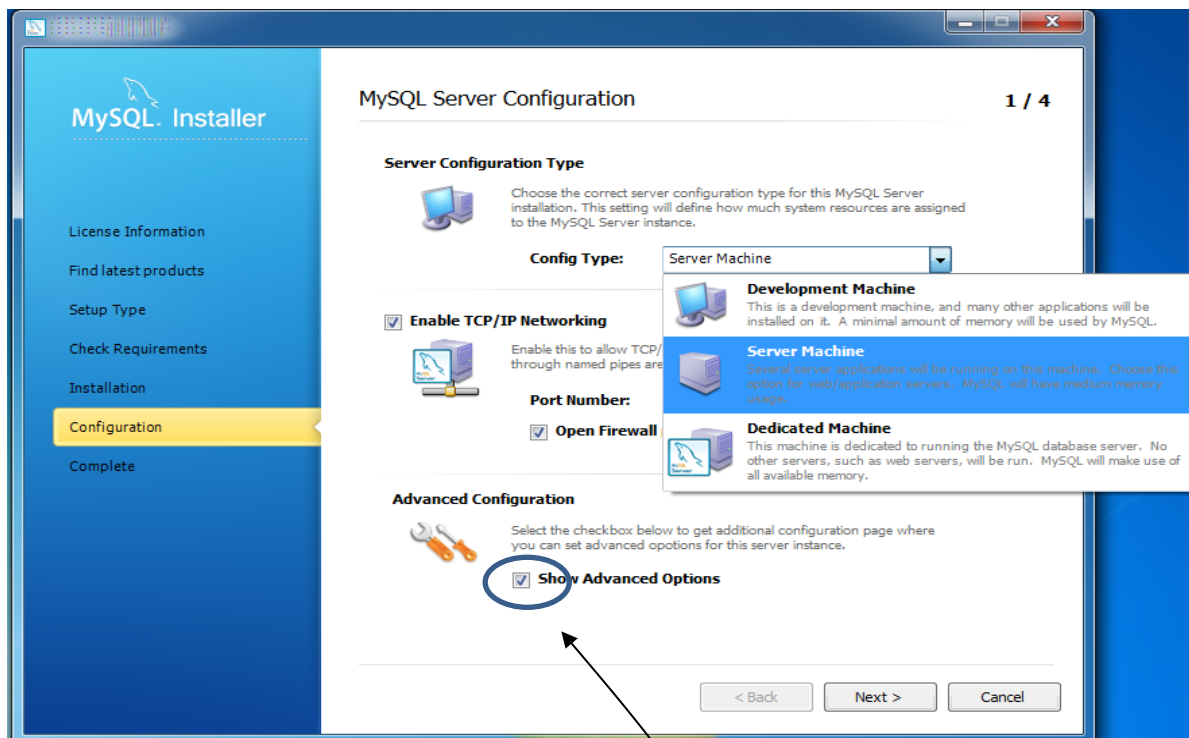
Lab Task: In this section above,

- Accept all the Server modules
- In Applications: **Select Workbench and Utilities.** That is, Deselect the MySQL for Excel and Notifier options. We do not have Excel installed or access to the internet so we do not need those modules of the DBMS.
- Accept the default Connectors
- Accept Documentation defaults, but ensure Samples & Examples is checked.



Task: Select Execute

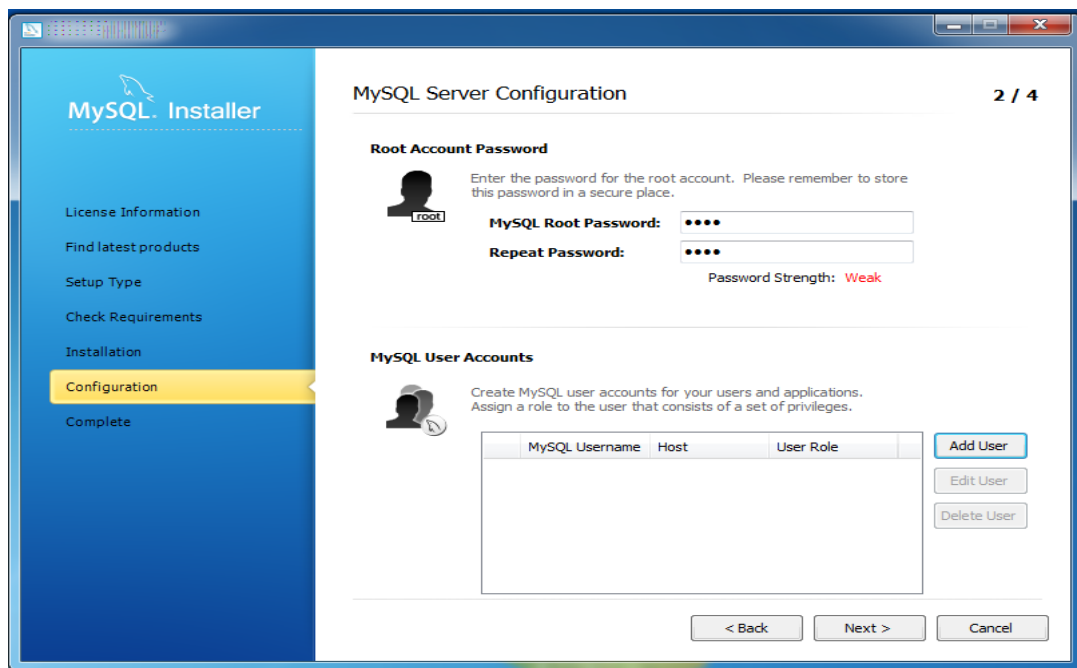




Select the 'Server Machine' option,

NB tick the box for 'Show Advanced Options'

1. In MySQL Server Instance configuration wizard, select Detailed Configuration option, Next
2. Take note of the three **types of MySQL instance and their function/ disk usage**.
3. Select 'Dedicated MySQL Server Machine' option
4. Take note of **the three Database usage types and how they differ**. You may need to research the terms used i.e. storage engine.
5. In Network Options window, note **the DBA responsibility for TCP, port and firewall options**.



Security: a critical security issue is installation user accounts and default passwords.

You need to research and be able to discuss this aspect of security.

For simplicity, ease of use etc, we will all use

Username root

Password root

As you can see there is programming logic in the Install program to analyse and report on the effective strength of the password from a security perspective.

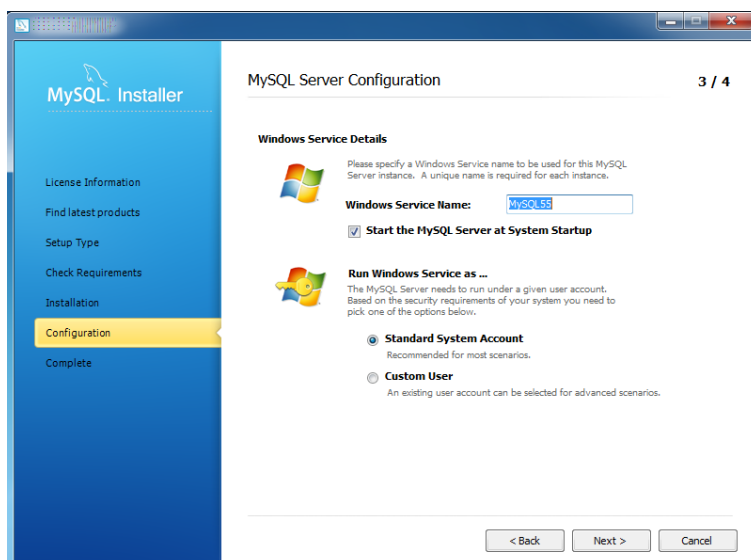
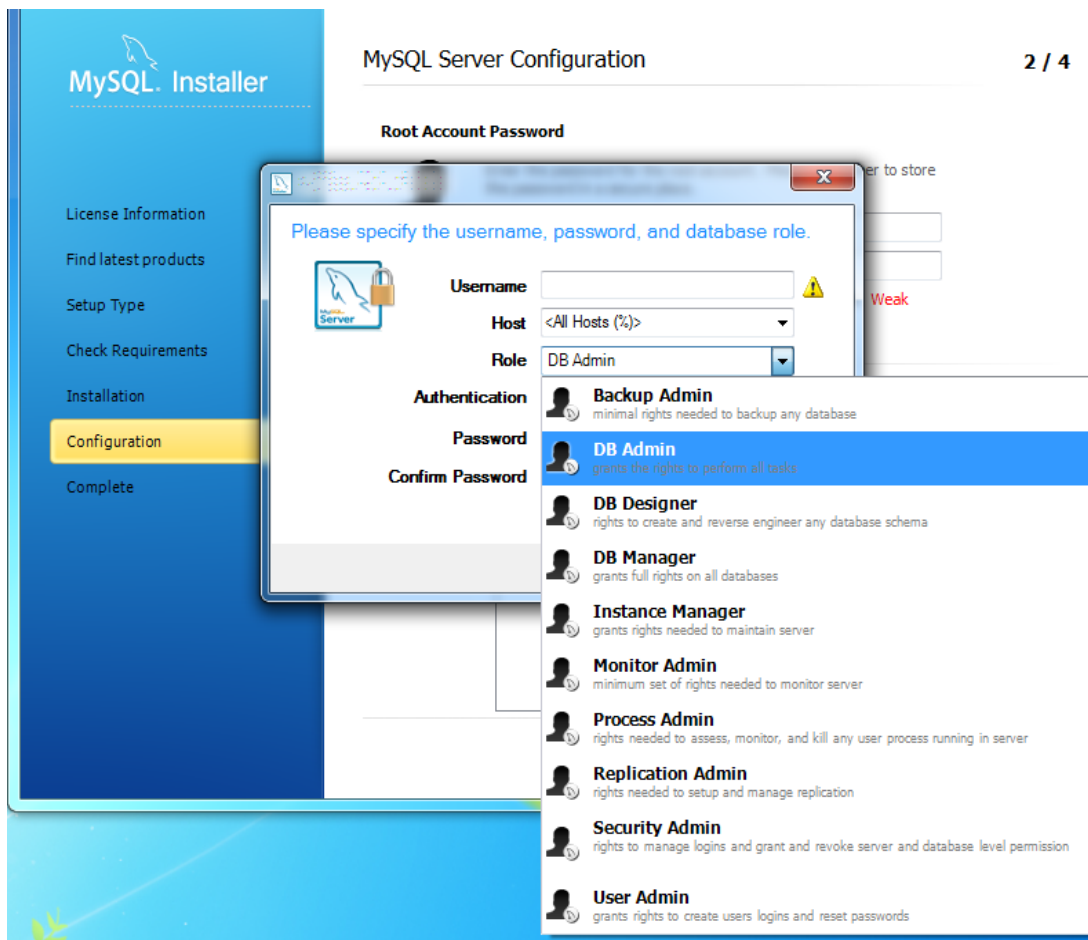
This is another aspect of security that you should be able to discuss, for instance, is there any potential problem with using strong passwords? Or, what are the implications for using strong passwords from a DBA perspective?

In the User Accounts section, we see that when you create a user you should/must

‘Assign a role to the user that consists of a set of privileges’

You need to research and be able to discuss this aspect of security e.g. what are roles, what do they consist of, what are privileges, why are privileges organised into roles? Etc.

DO NOT CREATE A USER, just note how there are different types already set up in MySQL.



This screen controls the Server start-up/boot up options. In Windows, installed program start-up is controlled using the notion of services. Services (i.e. selected programs) can be set to automatically run at OS system start up time.

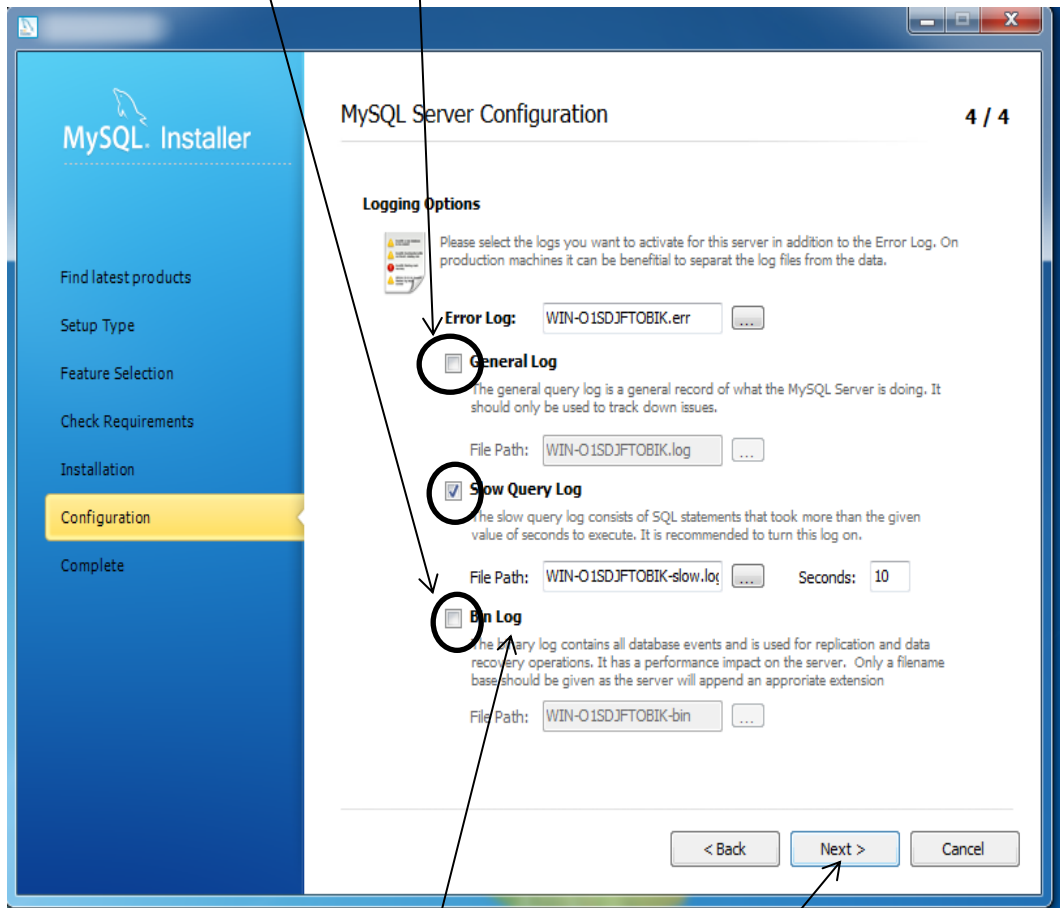
What is the alternative to controlling the DBMS server as a start up service? i.e. if you were to untick the 'Start the MySQL Server at System Startup' option, how do you control the DBMS server?

Research this topic.

Research and be able to discuss the following configuration control options.

MySQL is designed (programmed) to use 4 logs.

NB **** **MAKE SURE YOU TICK ALL of the log options.** ****



Recovery: Logging is a critical part of

1. recovery
2. performance
3. security

MAKE SURE YOU TICK ALL of the logs. Then Next

You need to research and be able to discuss the use of logs, their function, and log management; e.g. what are the factors that influence the value set in the 'Seconds' parameter box for the slow query log?

A slow query log is passive, in that it requires the DBA to make a conscious decision to examine it. Can you outline a way that the slow query log might be processed to alert the DBA when performance is poor?

File Management: notice the naming of the log files in the screen. Comment on the use of naming schemes by a DBA. What are they, why use them?

Finish the installation.
Check MySql entry in Start- Programs list.

Now install the MySql clients program(s) called Workbench.

The package contains 3 utilities/tools.

----- End of Installation section -----

1. The MySql server program (mysqld) which is the DBMS itself can be run from the command prompt; You can run as many simultaneous server instances as the computer can handle (just rerun the server program in a new window. We have opted that the mysql server program is loaded (run) as a service when windows is started up.
2. Check that the mysql service has started using the Services option in the Administrative tools utility in Control Panel. Highlight MySql service, right Click, properties to check that the server program is run (mysqld).
3. Run the MySql Administrator GUI, WorkBench
4. In the MySql Server window enter the following
Server Host: localhost
Port: 3306
Username root
Password ***
5. Click Ok

Effectively, you have installed the server and the client tools (including the GUIs) on the same machine. But you should note that MySql is a client –server system and therefore the clients could in fact be installed and run from anywhere on a network. So when you run one of the GUI you must type in (or select from drop down) the server host and the security access control setting (user name(id) and password).

Learning outcomes: You should be able to

- Explain the component **architecture** of a common Database along with the resource implications (e.g. disk space) for each component. Note tiered architecture.
- Explain how an instance of a database can be configured for different purposes and what system parameters change for each type e.g. transaction based.
- Explain that some DBMS products use some (product specific) exotic concepts not derived from general database theory e.g. tablespaces
- Explain how system setting such as **file locations, character sets, date/time, security, SQL, networking and concurrency are part of the DBA initial administration.**
- Explain how different DBMS products may have a number of utilities for administrating and querying the DBS data catalogs/data dictionary (i.e. the meta data that describes the system configuration. Also how product version numbers impact on system.
- Explain the installation process i.e. list the main aspects of the entire process, e.g. architecture; main application of the DB, data management etc.
- Explain when the installation/configuration process must account for programmer requirements/activity.