# XCAT 2.1 MySQL Setup

Version: 1.0

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# 1.0 Switch to the MySQL database on the Management Node

The xCAT support for Service Nodes requires a database with remote access capabilities.  The MySQL database is provided for this purpose.  You must be running the xCAT 2.1* code to use MySQL.

## 1.1.1 Install MySQL

On AIX:

The xCAT RPM called xcat-mysql-5.1-1 is provided as a convenience to help simplify the installation of MySQL on an AIX system.  This RPM includes version 5.1.26 of MySQL, (mysql-5.1.26-rc-aix5.3-powerpc.tar.gz) which is available from http://dev.mysql.com/downloads/mysql/5.1.html#aix.

You will also need to install perl-DBD-mysql.

Both of these packages are included in the xcat-deps.tar.gz file that was downloaded when setting up the xCAT management node.

To install the packages use the following commands:

> *rpm -i xcat-mysql-5.1-1.aix5.3.ppc.rpm*
> *rpm -i perl-DBD-mysql-4.007-1.aix5.3.ppc.rpm*

The  *xcat-mysql* post processing will automatically unwrap MySQL in the /usr/local directory and will create a link for /usr/local/mysql.  I will also update the PATH environment variable in the /etc/profile file.

On Linux:

MySQL comes as part of the OS.  Insure that the following rpms are installed on your Management  Node:
perl-DBD-MySQL*
mysql-server-5.*
mysql-5.*
mysql-devel-5.*
mysql-bench-5.*
mysql-5.*
mysql-connector-odbc-*
mysql-devel-5.*

## 1.1.2  Configure MySQL


To set up the MySQL  database on the Management Node follow these steps. (See http://dev.mysql.com/doc/refman/5.1/en/installing-binary.html for additional details.)

This example assumes:

- mn20:  hostname of management node
- xcatdb:  database name
- mysql:  database role (aka user)
- xcatadmin  database user id used by xCAT for access
- xcat201:  database password for xcatadmin



Substitute your addresses and desired database administration, password and database name as appropriate.

On  AIX: The example assumes that **mysql** it was installed in */usr/local and commands and the database  is under /usr/local/mysql*  directory.
On Linux:  mysql is already installed in /usr/bin and the database is in /var/lib/mysql ( tested on Redhat).
Set your paths accordingly.

1. For AIX, add a login user and group for **mysqld** ( this is probably already there on  Linux):
    *add the group  mysql*
    *add the user    mysql*

2. On AIX, Update permissions on installed mysql
    *cd /usr/local/mysql*
    *chown -R mysql .*
    *chgrp -R mysql .*

3. Create the MySQL data directory and initialize the grant tables:

> *On AIX:*
> *cd /usr/local/mysql*
> */usr/local/mysql/scripts/mysql_install_db –user=mysql*
>
> *On Linux: /usr/bin/mysql_install_db --user=mysql*

4. Edit Server config file to run in ASCI-QUOTES mode ( required)
   On AIX:

> *cp /usr/local/mysql/support-files/my-large.cnf /etc/my.cnf*

> On Linux and AIX: edit /etc/my.cnf .
>
> under the # The MySQL server [mysqld]    section
>
> add the following line:     *sql_mode = ANSI_QUOTES*

5. On AIX:Update permissions for root to own database
   > *cd /usr/local/mysql*
   > *chown -R root .*
   > *chown -R mysql data*

6. Start the MySQL server ( running as root must use the --user option):

> *On AIX:*
> */usr/local/mysql/bin/mysqld_safe --user=mysql &*
> *On Linux:*
> */usr/bin/mysqld_safe --user=mysql &*

7. Set the root passwd for the server
   ON AIX:
   /usr/local/mysql/bin/mysqladmin -u root password
   'new-password'
   On Linux:
   /usr/bin/mysqladmin -u root password 'new-password'

8. If command fails,
   On AIX: check the /usr/local/mysql/data/mn20.err
   file.
   On Linux: check /var/log/mysqld.log

9. To stop MySQL server run the following command:

```
On AIX: /usr/local/mysql/bin/mysqladmin -u root -p
shutdown
On Linux: /usr/bin/mysqladmin -u root -p shutdown
```

10. `If you stop MySQL,  restart the MySQL server.`
    *On AIX:*
    */usr/local/mysql/bin/mysqld_safe --user=mysql &*
    *On Linux:*
    */usr/bin/mysqld_safe --user=mysql &*

11. Create the *xcatdb* database.
    *On AIX: /usr/local/mysql/bin/mysql  -u root -p*
    *On Linux: /usr/bin/mysql -u root -p*
    *Enter password:*
    *mysql > CREATE DATABASE xcatdb;*

12. Create the xcat admin id with password  xcat201 and set permissions.
    On AIX:*/usr/local/mysql/bin/mysql  -u root -p*

    *On Linux: /usr/bin/mysql -u root -p*

    Enter password:

    mysql > CREATE USER xcatadmin IDENTIFIED BY 'xcat201';

    mysql > GRANT ALL on xcatdb.* TO 'xcatadmin'@'mn20'
IDENTIFIED BY 'xcat201';
    mysql > GRANT ALL on xcatdb.* to xcatadmin'@'<servicenode
ip(s)>' IDENTIFIED BY 'xcat201';
    Substitute your own admin id name and password and management
node and service node ip address or name.

13. Check the user table.
    mysql > SELECT host, user FROM mysql.user;

14. Check the defined databases.
    mysql > SHOW DATABASES;

15. To run commands against the *xcatdb* database you can enter MySQL commands as follows:
>    *mysql > use xcatdb;*
>    *mysql > SHOW TABLES;*
>    *mysql > DESCRIBE <table name>;*

To exit:
>    *mysql > quit;*

## 1.1.3  Migrate xCAT data to MySQL

1. Back up  your xCAT data.  (This is required even if you have not added anything to your xCAT database yet.  Required default entries were created when the xCAT RPMs were installed on the management node and they must be migrated to the new MySQL database.)
>    *mkdir -p ~/xcat-dbback*
>    *dumpxCATdb -p ~/xcat-dbback*

2. /etc/xcat/cfgloc should contain the following line, substituting your specific info. This points the xCAT database access code to the new database.
>    *mysql:dbname=xcatdb;host=mn20|xcatadmin|xcat201*

3. Copy /etc/xcat/cfgloc  to /install/postscripts/etc/xcat/cfgloc for installation on the service nodes.
>    *mkdir -p /install/postscripts/etc/xcat*
>    *cp /etc/xcat/cfgloc /install/postscripts/etc/xcat/cfgloc*
>    *chmod 700 /etc/xcat/cfgloc*

4. Restore your database to MySQL (bypass mode runs the command without xcatd):
>    *XCATBYPASS=1 restorexCATdb -p ~/xcat-dbback*

5. Start the xcatd daemon using the MySQL database
>    *service xcatd restart*