

```
Desktop — joe@db-thegummibear: ~ — ssh • ssh yavin — 80x24
~/Desktop — ssh • ssh yavin  joe@db-thegummibear: ~ —...  ~/Desktop — -bash +
[joe@db-thegummibear:~$ echo "Check to see if mysql is listening"
Check to see if mysql is listening
[joe@db-thegummibear:~$ netstat -natp | grep 3306
(Not all processes could be identified, non-owned process info
will not be shown, you would have to be root to see it all.)
tcp          0          0 127.0.0.1:3306          0.0.0.0:*                LISTEN
-
[joe@db-thegummibear:~$ echo "ONLY listening on the localhost address. We need to
fix that"
ONLY listening on the localhost address. We need to fix that
joe@db-thegummibear:~$ █
```

The image shows a terminal window with a title bar that reads "Desktop — joe@db-thegummibear: ~ — ssh • ssh yavin — 80x24". Below the title bar are three tabs: the first is "~/Desktop — ssh • ssh yavin", the second is "joe@db-thegummibear: ~ —...", and the third is "~/Desktop — -bash". The main content of the terminal is a single line of text: "joe@db-thegummibear:~\$ sudo vi /etc/mysql/mysql.conf.d/mysqld.cnf", followed by a dark grey cursor block.

```
joe@db-thegummibear:~$ sudo vi /etc/mysql/mysql.conf.d/mysqld.cnf
```

```
Desktop — joe@db-thegummibear: ~ — ssh * ssh yavin — 80x24
~/Desktop — ssh * ssh yavin  joe@db-thegummibear: ~ —...  ~/Desktop — -bash +
pid-file          = /var/run/mysqld/mysqld.pid
socket            = /var/run/mysqld/mysqld.sock
port              = 3306
basedir           = /usr
datadir           = /var/lib/mysql
tmpdir            = /tmp
lc-messages-dir  = /usr/share/mysql
skip-external-locking
#
# Instead of skip-networking the default is now to listen only on
# localhost which is more compatible and is not less secure.
bind-address      = 127.0.0.1
#
# * Fine Tuning
#
key_buffer_size   = 16M
max_allowed_packet = 16M
thread_stack      = 192K
thread_cache_size = 8
# This replaces the startup script and checks MyISAM tables if needed
# the first time they are touched
myisam-recover-options = BACKUP
#max_connections    = 100
43,1 38%
```

```
Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 80×24
~/Desktop — ssh ◀ ssh yavin    joe@db-thegummibear: ~ —...    ~/Desktop — -bash    +
pid-file          = /var/run/mysqld/mysqld.pid
socket            = /var/run/mysqld/mysqld.sock
port              = 3306
basedir           = /usr
datadir           = /var/lib/mysql
tmpdir            = /tmp
lc-messages-dir  = /usr/share/mysql
skip-external-locking
#
# Instead of skip-networking the default is now to listen only on
# localhost which is more compatible and is not less secure.
#bind-address      = 127.0.0.1
#
# * Fine Tuning
#
key_buffer_size   = 16M
max_allowed_packet = 16M
thread_stack      = 192K
thread_cache_size = 8
# This replaces the startup script and checks MyISAM tables if needed
# the first time they are touched
myisam-recover-options = BACKUP
#max_connections    = 100
"/etc/mysql/mysql.conf.d/mysqld.cnf" 104L, 3029C written    43,1    38%
```



The image shows a terminal window with a title bar that reads "Desktop — joe@db-thegummibear: ~ — ssh * ssh yavin — 80x24". The window contains three tabs: the first is labeled "~/Desktop — ssh * ssh yavin", the second is "joe@db-thegummibear: ~ —...", and the third is "~/Desktop — -bash". The main content of the terminal shows a prompt "[joe@db-thegummibear:~\$" followed by the command "sudo service mysql restart". The prompt then changes to "joe@db-thegummibear:~\$" with a cursor, indicating the command has been executed.

```
[joe@db-thegummibear:~$ sudo service mysql restart  
joe@db-thegummibear:~$ █
```

```
Desktop — joe@db-thegummibear: ~ — ssh • ssh yavin — 100x26
~/Desktop — ssh • ssh yavin  • joe@db-thegummibear: ~ — ssh • ssh...  joe@www-thegummibear: ~ — ssh • ss...  +

joe@db-thegummibear:~$ netstat -natp | grep 3306
(Not all processes could be identified, non-owned process info
will not be shown, you would have to be root to see it all.)
tcp6      0      0 :::3306          :::*              LISTEN      -
joe@db-thegummibear:~$
```

```
Desktop — joe@www-thegummibear: ~ — ssh • ssh yavin — 80x24
~/Desktop — ssh • ssh yavin  joe@db-thegummibear: ~...  • joe@www-thegummibear:...  ~/Desktop — -bash  +
joe@www-thegummibear:~$ echo "Now on the web server, going to test remote connectivity"
Now on the web server, going to test remote connectivity
joe@www-thegummibear:~$ █
```

```
Desktop — joe@www-thegummibear: ~ — ssh * ssh yavin — 80x24
~/Desktop — ssh * ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
joe@www-thegummibear:~$ mysql -h db.thegummibear.com -u harry -p
The program 'mysql' can be found in the following packages:
 * mysql-client-core-5.7
 * mariadb-client-core-10.0
Try: sudo apt install <selected package>
joe@www-thegummibear:~$ sudo apt-get install mysql-client
```



```
Desktop — joe@www-thegummibear: ~ — ssh • ssh yavin — 80x24
~/Desktop — ssh • ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
joe@www-thegummibear:~$ mysql -h db.thegummibear.com -u harry -p
Enter password:
ERROR 1130 (HY000): Host '144.38.199.165' is not allowed to connect to this MySQL
server
joe@www-thegummibear:~$ █
```

```
Desktop — joe@www-thegummibear: ~ — ssh ◀ ssh yavin — 80x24
~/Desktop — ssh ◀ ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
joe@www-thegummibear:~$ echo "that is ok, this might not be a connectivity issue
, rather a permissions issue"
that is ok, this might not be a connectivity issue, rather a permissions issue
joe@www-thegummibear:~$ █
```



The image shows a terminal window with a title bar that reads "Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 100×26". The window contains four tabs: "~/Desktop — ssh ◀ ssh yavin", "joe@db-thegummibear: ~...", "joe@www-thegummibear:...", and "~/Desktop — -bash". The main content of the terminal shows a command being executed: `joe@db-thegummibear:~$ echo "back on the mysql server. Lets look at permissions"`. The output of the command is `back on the mysql server. Lets look at permissions`. The prompt `joe@db-thegummibear:~$` is shown again on the next line, indicating the command has finished.

```
Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 100×26
~/Desktop — ssh ◀ ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
[joe@db-thegummibear:~$ echo "back on the mysql server. Lets look at permissions"
back on the mysql server. Lets look at permissions
joe@db-thegummibear:~$ █
```

```
Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 100×26
~/Desktop — ssh ◀ ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
[joe@db-thegummibear:~$ mysql -u root -p
[Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 4
Server version: 5.7.15-0ubuntu0.16.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> █
```

```
Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 100x26
~/Desktop — ssh ◀ ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
[mysql> use mysql;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
[mysql> Select User, Host from user;
+-----+-----+
| User          | Host          |
+-----+-----+
| debian-sys-maint | localhost    |
| harry         | localhost    |
| lucius        | localhost    |
| mysql.sys     | localhost    |
| root          | localhost    |
+-----+-----+
5 rows in set (0.00 sec)

mysql> █
```




The image shows a macOS terminal window with a title bar that reads "Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 100×26". The window contains four tabs: "~/Desktop — ssh ◀ ssh yavin", "joe@db-thegummibear: ~...", "joe@www-thegummibear:...", and "~/Desktop — -bash". The active tab is "joe@db-thegummibear: ~...". The terminal content shows a command being executed: `joe@db-thegummibear:~$ echo "only harry from localhost has been granted permissions"`, followed by the output: `only harry from localhost has been granted permissions`. The prompt `joe@db-thegummibear:~$` is shown again with a cursor.

```
joe@db-thegummibear:~$ echo "only harry from localhost has been granted permissions"
only harry from localhost has been granted permissions
joe@db-thegummibear:~$
```

```
Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 100x26
~/Desktop — ssh ◀ ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
[mysql> Select User, Host from db;
+-----+-----+
| User      | Host      |
+-----+-----+
| harry     | localhost |
| lucius    | localhost |
| mysql.sys | localhost |
+-----+-----+
3 rows in set (0.00 sec)

[mysql> Select User, Host from user;
+-----+-----+
| User          | Host      |
+-----+-----+
| debian-sys-maint | localhost |
| harry          | localhost |
| lucius         | localhost |
| mysql.sys      | localhost |
| root           | localhost |
+-----+-----+
5 rows in set (0.00 sec)

mysql> █
```



The image shows a terminal window with a title bar that reads "Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 100×26". The window contains four tabs: "~/Desktop — ssh ◀ ssh yavin", "joe@db-thegummibear: ~...", "joe@www-thegummibear:...", and "~/Desktop — -bash". The main content of the terminal shows a user prompt "joe@db-thegummibear:~\$" followed by the command "echo \"we can change that by once again using the GRANT statement\"". The output of the command is "we can change that by once again using the GRANT statement". The prompt "joe@db-thegummibear:~\$" is repeated on the next line with a cursor.

```
joe@db-thegummibear:~$ echo "we can change that by once again using the GRANT statement"
we can change that by once again using the GRANT statement
joe@db-thegummibear:~$
```



```
Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 100×26
~/Desktop — ssh ◀ ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
mysql> GRANT ALL PRIVILEGES ON hogwarts.* to 'harry'@'www.thegummibear.com' IDENTIFIED BY 'alohamora';
Query OK, 0 rows affected, 1 warning (0.00 sec)

mysql> █
```

```
Desktop — joe@db-thegummibear: ~ — ssh ◀ ssh yavin — 100x26
~/Desktop — ssh ◀ ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
mysql> Select User, Host from db;
+-----+-----+
| User      | Host      |
+-----+-----+
| harry     | localhost |
| lucius    | localhost |
| mysql.sys | localhost |
| harry     | www.thegummibear.com |
+-----+-----+
4 rows in set (0.00 sec)

mysql> Select User, Host from user;
+-----+-----+
| User          | Host      |
+-----+-----+
| debian-sys-maint | localhost |
| harry         | localhost |
| lucius        | localhost |
| mysql.sys     | localhost |
| root          | localhost |
| harry         | www.thegummibear.com |
+-----+-----+
6 rows in set (0.01 sec)

mysql> █
```

```
Desktop — joe@www-thegummibear: ~ — ssh • ssh yavin — 80x24
~/Desktop — ssh • ssh yavin  joe@db-thegummibear: ~...  • joe@www-thegummibear:...  ~/Desktop — -bash  +
joe@www-thegummibear:~$ echo "Back on WWW, lets try connecting again"
Back on WWW, lets try connecting again
joe@www-thegummibear:~$ mysql -h db.thegummibear.com -u harry -p
Enter password:
ERROR 1130 (HY000): Host '144.38.199.165' is not allowed to connect to this MySQL
server
joe@www-thegummibear:~$ echo "We allowed www.thegummibear.com. When connecting to
mysql, it looks like it connects using our IP"
We allowed www.thegummibear.com. When connecting to mysql, it looks like it conn
ects using our IP
joe@www-thegummibear:~$ █
```

```
Desktop — joe@db-thegummibear: ~ — ssh • ssh yavin — 100x26
~/Desktop — ssh • ssh yavin • joe@db-thegummibear: ~... joe@www-thegummibear:... ~/Desktop — -bash +
[mysql> GRANT ALL PRIVILEGES ON hogwarts.* to 'harry'@'144.38.199.165' IDENTIFIED BY 'alohamora';
Query OK, 0 rows affected, 1 warning (0.00 sec)

[mysql> Select User, Host from db;
ERROR 1046 (3D000): No database selected
[mysql> use mysql
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
[mysql> Select User, Host from db;
+-----+-----+
| User      | Host                |
+-----+-----+
| harry     | 144.38.199.165     |
| harry     | localhost           |
| lucius    | localhost           |
| mysql.sys | localhost           |
| harry     | www.thegummibear.com |
+-----+-----+
5 rows in set (0.01 sec)

mysql> █
```

```
Desktop — joe@www-thegummibear: ~ — ssh ◀ ssh yavin — 80x24
~/Desktop — ssh ◀ ssh yavin  joe@db-thegummibear: ~...  • joe@www-thegummibear:...  ~/Desktop — -bash  +
joe@www-thegummibear:~$ echo "Back on WWW, try again."
Back on WWW, try again.
joe@www-thegummibear:~$ mysql -h db.thegummibear.com -u harry -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 5.7.15-0ubuntu0.16.04.1 (Ubuntu)

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> █
```



The image shows a terminal window with a title bar that reads "Desktop — joe@www-thegummibear: ~ — ssh ◀ ssh yavin — 80x24". The window contains four tabs: "~/Desktop — ssh ◀ ssh yavin", "joe@db-thegummibear: ~...", "joe@www-thegummibear:...", and "~/Desktop — -bash". The active tab is "joe@www-thegummibear:~". The terminal content shows a prompt "joe@www-thegummibear:~\$" followed by the command "echo \"Yay, we connected\"". The output of the command is "Yay, we connected". The prompt "joe@www-thegummibear:~\$" is shown again with a cursor, indicating the terminal is ready for the next command.

```
joe@www-thegummibear:~$ echo "Yay, we connected"
Yay, we connected
joe@www-thegummibear:~$ █
```

```
Desktop — joe@www-thegummibear: ~ — ssh * ssh yavin — 80x24
~/Desktop — ssh * ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
[mysql> show databases;
+-----+
| Database          |
+-----+
| information_schema |
| hogwarts           |
+-----+
2 rows in set (0.00 sec)

[mysql> use hogwarts;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
[mysql> show tables;
+-----+
| Tables_in_hogwarts |
+-----+
| spells              |
+-----+
1 row in set (0.00 sec)

mysql> █
```

```
Desktop — joe@www-thegummibear: ~ — ssh • ssh yavin — 80x24
~/Desktop — ssh • ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
mysql> select * from spells;
+-----+
| x     |
+-----+
|     4 |
|    55 |
|    44 |
+-----+
3 rows in set (0.00 sec)

mysql> █
```



```
Desktop — joe@www-thegummibear: ~ — ssh ◀ ssh yavin — 80x24
~/Desktop — ssh ◀ ssh yavin  joe@db-thegummibear: ~...  joe@www-thegummibear:...  ~/Desktop — -bash  +
mysql> quit
Bye
joe@www-thegummibear:~$ █
```