

# Python

SQL

# ORM

- Object Relational Mapping (Объектно-реляционное отображение)
- Объектно-реляционное отображение — это технология программирования, которая связывает базы данных с концепциями объектно-ориентированных языков программирования, создавая «виртуальную объектную базу данных». Существуют как проприетарные, так и свободные реализации этой технологии.

# Python

CSV

# Атрибуты при открытии файла

Режим	Обозначение
'r'	открытие на чтение (является значением по умолчанию).
'w'	открытие на запись, содержимое файла удаляется, если файла не существует, создается новый.
'x'	открытие на запись, если файла не существует, иначе исключение.
'a'	открытие на дозапись, информация добавляется в конец файла.
'b'	открытие в двоичном режиме.
't'	открытие в текстовом режиме (является значением по умолчанию).
'+'	открытие на чтение и запись

# Запись

- `d1={'name':'Pert','surname':'Romanov','age':44}`
- `d2={'name':'Vlodimir','surname':'Lenin','age':34}`
- `d3={'name':'Lev','surname':'Tolstoy','age':74}`
  
- `d_list=[d1,d2,d3]`
  
- `for i in d_list:`
- `print(i)`
- `write_csv(i)`

- `import csv`
- `def write_csv(data):`
- `with open('writers.csv','a') as file:`
- `writer=csv.writer(file)`
- `#writer=csv.writer(file,delimiter=',')`
- `#writer=csv.writer(file, dialect='Excel')`
- `#writer.writerow((data['name'],data['surname'],data['age']))`
- `writer.writerow([data['name'],data['surname'],data['age']])`

- def write\_csv2(data):
- with open('writers2.csv','a') as file:
- order=['name','surname','age']
- writer=csv.DictWriter(file,  
fieldnames=order)
- writer.writerow(data)

```
G:\django2018\csv>python csv001.py
{'name': 'Pert', 'surname': 'Romanov', 'age': 44}
{'name': 'Ulodimir', 'surname': 'Lenin', 'age': 34}
{'name': 'Lev', 'surname': 'Tolstoy', 'age': 74}

G:\django2018\csv>python csv001.py
{'surname': 'Romanov', 'name': 'Pert', 'age': 44}
{'surname': 'Lenin', 'name': 'Ulodimir', 'age': 34}
{'surname': 'Tolstoy', 'name': 'Lev', 'age': 74}
```

# Чтение

- `def open_csv():`
- `with open('writers2.csv','r') as file:`
- `reader=csv.DictReader(file)`
- `for i in reader:`
- `print(i)`

```
G:\django2018\csv>python csv003.py
{'Romanov': 'Lenin', '44': '34', 'Pert': 'Ulodimir'}
{'Romanov': 'Tolstoy', '44': '74', 'Pert': 'Lev'}
```



- def open\_csv():
- with open('writers2.csv','r') as file:
- order=['name','surname','age']
- reader=csv.DictReader(file,  
fieldnames=order)
- for i in reader:
- print(i)

```
G:\django2018\csv>python csv004.py
{'age': '44', 'name': 'Pert', 'surname': 'Romanov'}
{'age': '34', 'name': 'Ulodimir', 'surname': 'Lenin'}
{'age': '74', 'name': 'Lev', 'surname': 'Tolstoy'}
```

```
import csv
csvFile=open('csv001.csv','wt')

writer=csv.writer(csvFile)
writer.writerow(('number','numper plus 2','number times 2'))
for i in range(10):
    writer.writerow((i,i+2,i*2))
csvFile.close()
```

```
number,numper plus 2,number times 2
0,2,0
1,3,2
2,4,4
3,5,6
4,6,8
5,7,10
6,8,12
7,9,14
8,10,16
9,11,18
```

# Скрайбинг текста из википедии

```
import csv
from urllib.request import urlopen
from bs4 import BeautifulSoup as BS

html=urlopen("http://en.wikipedia.org/wiki/Comparison_of_text_editors")
bs_str=BS(html,'lxml')

table=bs_str.findAll('table',{'class':'wikitable'})[0]
rows=table.findAll('tr')

csvFile=open('editors.csv','wt')
writer=csv.writer(csvFile)

for row in rows:
    csvRow=[]
    for cell in row.findAll(['td','th']):
        csvRow.append(cell.get_text())
        writer.writerow(csvRow)

csvFile.close()
```

SQLite

# pip install peewee



```
C:\Python33\Scripts>pip3 install peewee
DEPRECATION: Python 3.3 supported has been deprecated and support for it will be
dropped in the future. Please upgrade your Python.
Collecting peewee
  Downloading https://files.pythonhosted.org/packages/f1/15/6c861d6351613be83fd9
92b5431ac15353dfbd796ea780dc565b6cdf732d/peewee-3.7.1.tar.gz (2.2MB)
    100% |#####| 2.2MB 2.0MB/s
Building wheels for collected packages: peewee
  Running setup.py bdist_wheel for peewee ... done
  Stored in directory: C:\Users\836D~1\AppData\Local\pip\Cache\wheels\f1\02\73\1
4974b571ebf1dcc3b0af965ff96e4f7e47e75797222ccadf6
Successfully built peewee
Installing collected packages: peewee
Successfully installed peewee-3.7.1
```

# pip install flask-peewee

```
Администратор: Командная строка

Collecting itsdangerous==0.24 (from Flask->flask-peewee)
  Downloading https://files.pythonhosted.org/packages/dc/b4/a60bcdba945c00f6d608
d8975131ab3f25b22f2bcfe1dab221165194b2d4/itsdangerous-0.24.tar.gz (46kB)
  100% |#####| 51kB 239kB/s
Collecting MarkupSafe==0.23 (from jinja2->flask-peewee)
  Downloading https://files.pythonhosted.org/packages/4d/de/32d741db316d8fdb7680
822dd37001ef7a448255de9699ab4bfc bdf4172b/MarkupSafe-1.0.tar.gz
Building wheels for collected packages: flask-peewee, wtf-peewee, itsdangerous,
MarkupSafe
  Running setup.py bdist_wheel for flask-peewee ... done
  Stored in directory: C:\Users\836D~1\AppData\Local\pip\Cache\wheels\32\7e\4c\c
9d3071a6f21f951ee5e832b4f74374715c281a843e619e4fd
  Running setup.py bdist_wheel for wtf-peewee ... done
  Stored in directory: C:\Users\836D~1\AppData\Local\pip\Cache\wheels\ab\c9\f8\b
2aadd1bca28c5c54392a2752da50771ea3010558143ef317
  Running setup.py bdist_wheel for itsdangerous ... done
  Stored in directory: C:\Users\836D~1\AppData\Local\pip\Cache\wheels\2c\4a\61\5
599631c1554768c6290b08c02c72d7317910374ca602ff1e5
  Running setup.py bdist_wheel for MarkupSafe ... done
  Stored in directory: C:\Users\836D~1\AppData\Local\pip\Cache\wheels\33\56\20\e
be49a5c612fffe1c5a632146b16596f9e64676768661e4e46
Successfully built flask-peewee wtf-peewee itsdangerous MarkupSafe
Installing collected packages: werkzeug, click, itsdangerous, MarkupSafe, jinja2
, Flask, wtforms, wtf-peewee, flask-peewee
The script flask.exe is installed in 'c:\python33\Scripts' which is not on PAT
H.
Consider adding this directory to PATH or, if you prefer to suppress this warn
ing, use --no-warn-script-location.
Successfully installed Flask-1.0.2 MarkupSafe-1.0 click-6.7 flask-peewee-3.0.3 i
tsdangerous-0.24 jinja2-2.10 werkzeug-0.14.1 wtf-peewee-3.0.0 wtforms-2.2.1

C:\Python33\Scripts>
```

```
C:\Python33\Scripts>pip freeze
DEPRECATION: Python 3.3 supported has been
dropped in the future. Please upgrade
beautifulsoup4==4.6.3
click==6.7
Flask==1.0.2
flask-peewee==3.0.3
itsdangerous==0.24
Jinja2==2.10
lxml==4.2.5
MarkupSafe==1.0
peewee==3.7.1
psycopy2==2.7.5
psycopy2-binary==2.7.5
Werkzeug==0.14.1
wtf-peewee==3.0.0
WTForms==2.2.1
```

```
from peewee import *

db = SqliteDatabase('people.db')

class Person(Model):
    name=CharField()
    birthday=DateField()
    is_relative=BooleanField()

    class Meta:
        database=db
```



- `null=False` – возможно ли хранение `null`-значений;
- `index=False` – создавать ли индекс для данного столбца в базе;
- `unique=False` – создавать ли уникальный индекс для данного столбца в базе; `verbose_name=None` – строка для человекопонятного представления поля;
- `help_text=None` – строка с вспомогательным текстом для поля;
- `db_column=None` – строка, явно задающая название столбца в базе для данного поля, используется например при работе с legacy базой данных;
- `default=None` – значение по-умолчанию для полей класса при инстанцировании;
- `choices=None` – список или кортеж двухэлементных кортежей, где первый элемент – значение для базы, второй – отображаемое значение (аналогично джанге);
- `primary_key=False` – использовать ли данное поле, как первичный ключ;
- `sequence=None` – последовательность для наполнения поля (удостоверьтесь, что бекэнд поддерживает такую функциональность);

# Метаданные

Опция	Описание	Наследуется?
database	база данных для модели	да
db_table	название таблицы, в которой будут храниться данные	нет
indexes	список полей для индексирования	да
order_by	список полей для сортировки по-умолчанию	да
primary_key	составной первичный ключ, экземпляр класса CompositeKey	да
table_alias	алиас таблицы для использования в запросах	нет

# Типы полей 1

Field Type	Sqlite	Postgresql	MySQL
IntegerField	integer	integer	integer
BigIntegerField	integer	bigint	bigint
SmallIntegerField	integer	smallint	smallint
AutoField	integer	serial	integer
BigAutoField	integer	bigserial	bigint

# Типы полей 2

Field Type	Sqlite	Postgresql	MySQL
IdentityField	not supported	int identity	not supported
FloatField	real	real	real
DoubleField	real	double precision	double precision
DecimalField	decimal	numeric	numeric
CharField	varchar	varchar	varchar
FixedCharField	char	char	char

# Типы полей 3

Field Type	Sqlite	Postgresql	MySQL
TextField	text	text	text
BlobField	blob	bytea	blob
BitField	integer	bigint	bigint
BigBitField	blob	bytea	blob
UUIDField	text	uuid	varchar(40)
BinaryUUIDField	blob	bytea	varbinary(16)

# Типы полей 4

Field Type	Sqlite	Postgresql	MySQL
DateTimeField	datetime	timestamp	datetime
DateField	date	date	date
TimeField	time	time	time
TimestampField	integer	integer	integer
IPField	integer	bigint	bigint
BooleanField	integer	boolean	bool
BareField	untyped	not supported	not supported
ForeignKeyField	integer	integer	integer

# Специальные параметры полей

Field type	Special Parameters
CharField	max_length
FixedCharField	max_length
DateTimeField	formats
DateField	formats
TimeField	formats
TimestampField	resolution, utc
DecimalField	max_digits, decimal_places, auto_round, rounding
ForeignKeyField	model, field, backref, on_delete, on_update, deferrable
BareField	adapt

```
from peewee import *

db=SqliteDatabase('testsql.db')

class Person(Model):
    name=CharField()
    birthday=DateField()
    is_relative=BooleanField()

    class Meta:
        database=db

class Pet(Model):
    owner = ForeignKeyField(Person, related_name='pets')
    name = CharField()
    animal_type=CharField()

    class Meta:
        database=db

Person.create_table()
Pet.create_table()
```



# https://sqlitebrowser.org/

## DB Browser for SQLite

The Official home of the DB Browser for  
SQLite



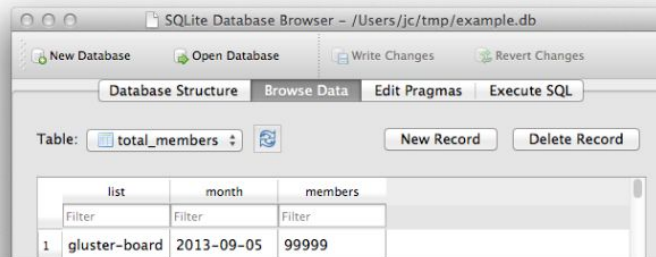
### // News

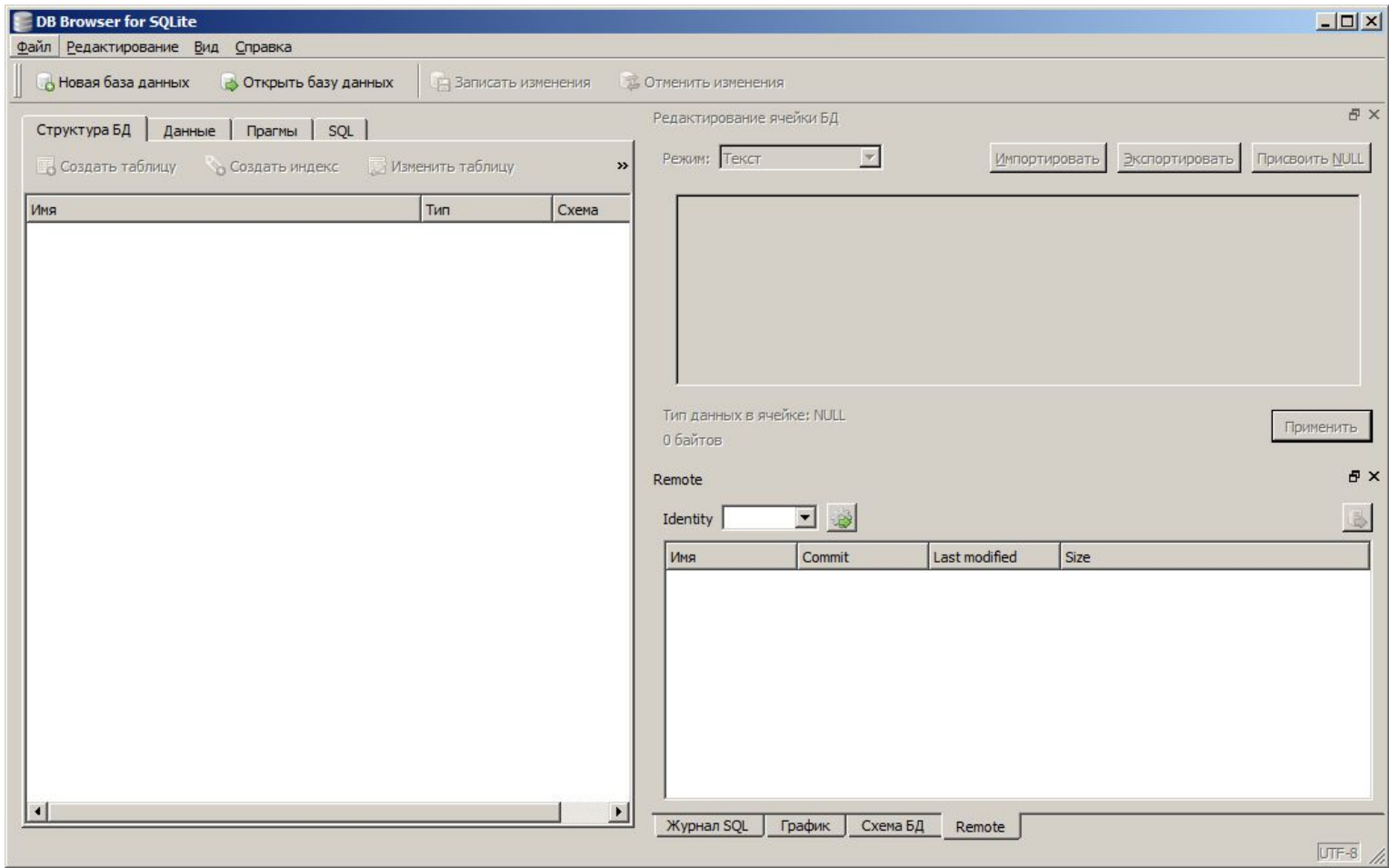
2018-10-10 - The first Windows and mac alpha builds for our next major release are ready. Please try them out, and report any weirdness.

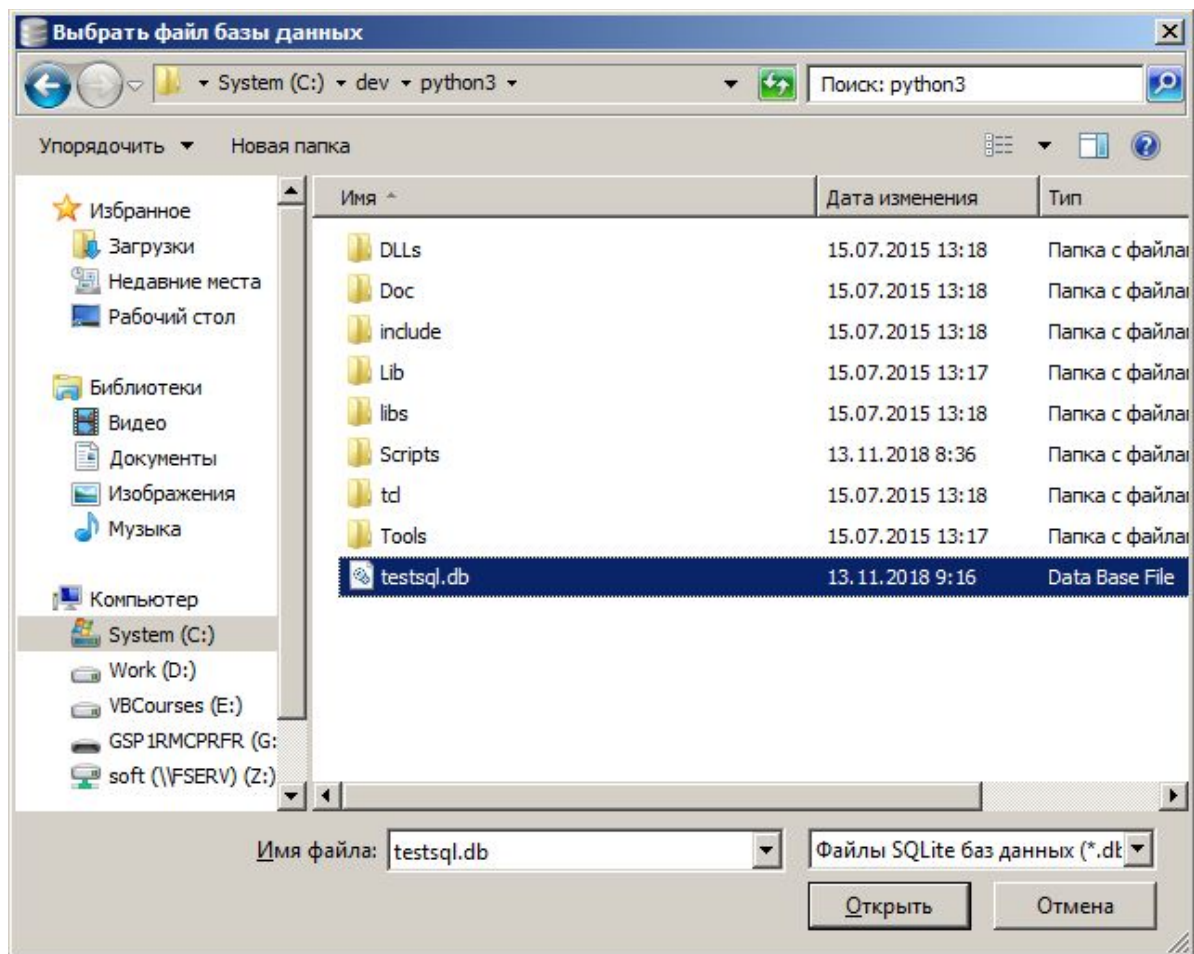
2018-08-09 - We've just started testing a new download server cluster. If anything seems weird with our downloads, please report it [here](#).

2018-06-08 - We've just created a Patreon account. Please become a Patron of DB Browser for SQLite! :)

### // Screenshot







Структура БД | Данные | Прагмы | SQL

Создать таблицу | Создать индекс | Modify Table >>

Имя	Тип	Схема
Таблицы (2)		
person		CREATE TA
id	INTEGER	`id` INTEGE
name	VARCHAR ( 255 )	`name` VAI
birthday	DATE	`birthday`
is_relative	INTEGER	`is_relative
pet		CREATE TA
id	INTEGER	`id` INTEGE
owner_id	INTEGER	`owner_id`
name	VARCHAR ( 255 )	`name` VAI
animal_type	VARCHAR ( 255 )	`animal_typ
Индексы (1)		
pet_owner_id		CREATE INI
Представления (0)		
Триггеры (0)		

# Использование save

```
uncle_bob=Person(name='Bob', birthday=date(1975,1,8), is_relative=True)  
uncle_bob.save()
```

id	name	birthday	is_relative
Фильтр	Фильтр	Фильтр	Фильтр
1	Bob	1975-01-08	1

# Использование create

```
granma=Person.create(name='Ann', birthday=date(1902,5,7), is_relative=True)  
herb=Person.create(name='Herb', birthday=date(1930,7,7), is_relative=False)
```

id	name	birthday	is_relative
ильтр	Фильтр	Фильтр	Фильтр
	Bob	1975-01-08	1
	Ann	1902-05-07	1
	Herb	1930-07-07	0

# Изменение записей

```
grandma.name = 'Grandma L.'  
grandma.save()
```

	id	name	birthday	is_relative
	Фильтр	Фильтр	Фильтр	Фильтр
1	1	Bob	1960-01-15	1
2	2	Grandma L.	1935-03-01	1
3	3	Herb	1950-05-05	0

```
bob_kitty = Pet.create(owner=uncle_bob, name='Kitty', animal_type='cat')
herb_fido = Pet.create(owner=herb, name='Fido', animal_type='dog')
herb_mittens = Pet.create(owner=herb, name='Mittens', animal_type='cat')
herb_mittens_jr = Pet.create(owner=herb, name='Mittens Jr', animal_type='cat')
```

	id	owner_id	name	animal_type
	Фильтр	Фильтр	Фильтр	Фильтр
1	1	1	Kitty	cat
2	2	3	Fido	dog
3	3	3	Mittens	cat
4	4	3	Mittens Jr	cat



```
herb_mittens.delete_instance()
herb_fido.owner = uncle_bob
herb_fido.save()
bob_fido = herb_fido
```

Структура БД				
Данные				
Прагмы				
SQL				
Table: pet				
Добавить запись				
Удалить запись				
	id	owner_id	name	animal_type
	Фильтр	Фильтр	Фильтр	Фильтр
1	1	1	Kitty	cat
2	2	1	Fido	dog
3	4	3	Mittens Jr	cat

# Извлечение одной записи SelectQuery.get()

```
grandma = Person.select().where(Person.name == 'Grandma L.').get()
print(grandma)
grandma = Person.get(Person.name == 'Grandma L.')
```

```
print(_grandma)
```

```
C:\dev\python3>python sqlite005.py
2
2
```

# Извлечение нескольких записей

```
for person in Person.select():  
    print (person.name, person.is_relative)
```

```
C:\dev\python3>python sqlite006.py  
Bob True  
Grandma L. True  
Herb False
```

```
for person in Person.select():
    print (person.name, person.is_relative)
print('\n')

for person in Person.select():
    print (person.name, person.pets.count(), 'pets')
    for pet in person.pets:
        print ('      ', pet.name, pet.animal_type)
print('\n')

for pet in Pet.select().where(Pet.animal_type == 'cat'):
    print (pet.name, pet.owner.name)
print('\n')
```

```
C:\dev\python3>python sqlite006.py
```

```
Bob True
```

```
Grandma L. True
```

```
Herb False
```

```
Bob 2 pets
```

```
    Kitty cat
```

```
    Fido dog
```

```
Grandma L. 0 pets
```

```
Herb 1 pets
```

```
    Mittens Jr cat
```

```
Kitty Bob
```

```
Mittens Jr Herb
```

# Использование join

```
for pet in Pet.select().join(Person).where(Person.name == 'Bob'):  
    print (pet.name)  
print('\n')  
  
#for pet in Pet.select().where(Pet.owner == uncle_bob):  
#    print (pet.name)  
#print('\n')
```

```
C:\dev\python3>python sqlite007.py  
Kitty  
Fido
```

# Сортировка по алфавиту SelectQuery.order\_by()

```
for pet in Pet.select().join(Person).where(Person.name == 'Bob'):  
    print (pet.name)  
print('\n')  
  
#for pet in Pet.select().where(Pet.owner == uncle_bob):  
#    print (pet.name)  
  
for pet in Pet.select().join(Person).where(Person.name == 'Bob').order_by(Pet.name):  
    print (pet.name)  
print('\n')  
  
#for pet in Pet.select().where(Pet.owner == uncle_bob).order_by(Pet.name):  
#    print (pet.name)
```

```
C:\dev\python3>python sqlite008.py  
Kitty  
Fido  
  
Fido  
Kitty
```

# Упорядочивание по возрасту

```
for person in Person.select().order_by(Person.birthday.desc()):  
    print (person.name)
```

```
C:\dev\python3>python sqlite010.py  
Bob  
Herb  
Grandma L.
```



# Фильтр по дате

```
d1940 = date(1940, 1, 1)
d1960 = date(1960, 1, 1)
for person in Person.select().where((Person.birthday < d1940) | (Person.birthday > d1960)):
    print (person.name)
```

```
C:\dev\python3>python sqlite010.py
Bob
Herb
Grandma L.

Bob
Grandma L.
```

# or не всегда работает

```
for person in Person.select().where((Person.birthday < d1940) or (Person.birthday > d1960)):
    print (person.name)
```

Grandma L.

```
for person in Person.select().where((Person.birthday > d1940) & (Person.birthday < d1960)):  
    print (person.name)
```

Herb

# Персонажи, начинающиеся с буквы g

```
for person in Person.select().where(fn.Lower(fn.Substr(Person.name, 1, 1)) == 'g'):  
    print (person.name)
```

```
C:\dev\python3>python sqlite011.py  
Grandma L.
```

SelectQuery.group\_by()

SelectQuery.having()

SelectQuery.limit()

SelectQuery.offset()



# Python

Postgre

# https://www.postgresql.org/download/



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18th October 2018: [PostgreSQL 11 Released!](#)

## Quick Links

- [Downloads](#)
  - [Binary](#)
  - [Source](#)
- [Software Catalogue](#)
- [File Browser](#)

## Downloads

### PostgreSQL Core Distribution

The core of the PostgreSQL object-relational database management system is available in several source and binary formats.

#### Binary packages

Pre-built binary packages are available for a number of different operating systems:

- [BSD](#)
  - [FreeBSD](#)
  - [OpenBSD](#)
- [Linux](#)
  - [Red Hat](#) family Linux (including [CentOS/Fedora/Scientific/Oracle](#) variants)
  - [Debian](#) GNU/Linux and derivatives
  - [Ubuntu](#) Linux and derivatives
  - [SuSE](#) and [OpenSUSE](#)
  - [Other](#) Linux
- [macOS](#)
- [Solaris](#)
- [Windows](#)

#### Source code

# http://postgresql.ru.net/



[Документация](#) | [Мануал](#) | [Мануал 8.4](#) | [Новости](#) | [О сайте](#) | [Поддержка](#) | [Поиск](#) | [Скачать](#) | [Форум](#)

## Навигация

- » [Обратная связь](#)
- » [Последние публикации](#)

## Реклама

### Вход для пользователей

Имя пользователя: \*

Пароль: \*

- » [Создать новую учётную запись](#)
- » [Запросить новый пароль](#)

[Начальная страница](#) > [Документация](#)

## Скачать

strict warning: Only variables should be passed by reference in /home/victor/web/postgresql.ru.net/public\_html/modules/book/book.module on line 559.

Posted Март 18th, 2008 by admin

### PostgreSQL 9.3.3

- » [PostgreSQL 9.3.3-1 для Windows \(32bit\) \(~53MB\)](#)
- » [PostgreSQL 9.3.3-1 для Windows \(64bit\) \(~53MB\)](#)
- » [Исходники PostgreSQL 9.3.3 \(~16MB\)](#)

### ODBC

- » [ODBC драйвер 9.3.x для Windows от 23.02.2014 \(в виде MSI\)\(~1.4MB\)](#)
- » [ODBC драйвер 9.3.x для Windows x64 от 23.02.2014 \(в виде MSI\)\(~1.6MB\)](#)

### Предыдущие релизы PostgreSQL

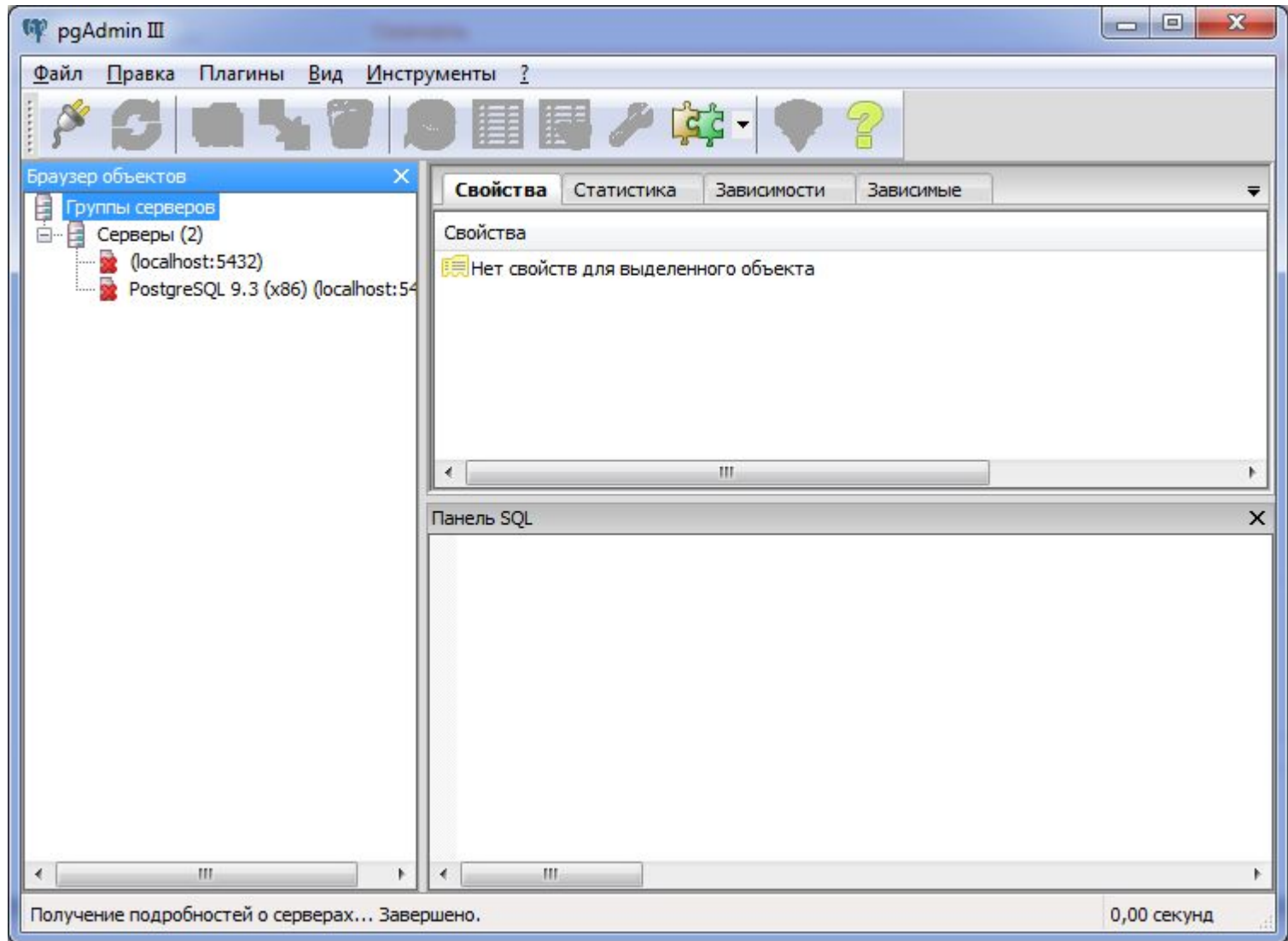
- » [PostgreSQL 9.2.7-1 для Windows \(32bit\) \(~50MB\)](#)
- » [PostgreSQL 9.2.7-1 для Windows \(64bit\) \(~50MB\)](#)
- » [Исходники PostgreSQL 9.2.7 \(~15MB\)](#)
- » [PostgreSQL 9.1.12-1 для Windows \(32bit\) \(~47MB\)](#)
- » [PostgreSQL 9.1.12-1 для Windows \(64bit\) \(~47MB\)](#)
- » [Исходники PostgreSQL 9.1.12 \(~15MB\)](#)
- » [PostgreSQL 9.0.16-1 для Windows \(32bit\) \(~45MB\)](#)
- » [PostgreSQL 9.0.16-1 для Windows \(64bit\) \(~45MB\)](#)
- » [Исходники PostgreSQL 9.0.16 \(~14MB\)](#)
- » [PostgreSQL 8.4.20-1 для Windows \(~42MB\)](#)
- » [Исходники PostgreSQL 8.4.20 \(~13MB\)](#)

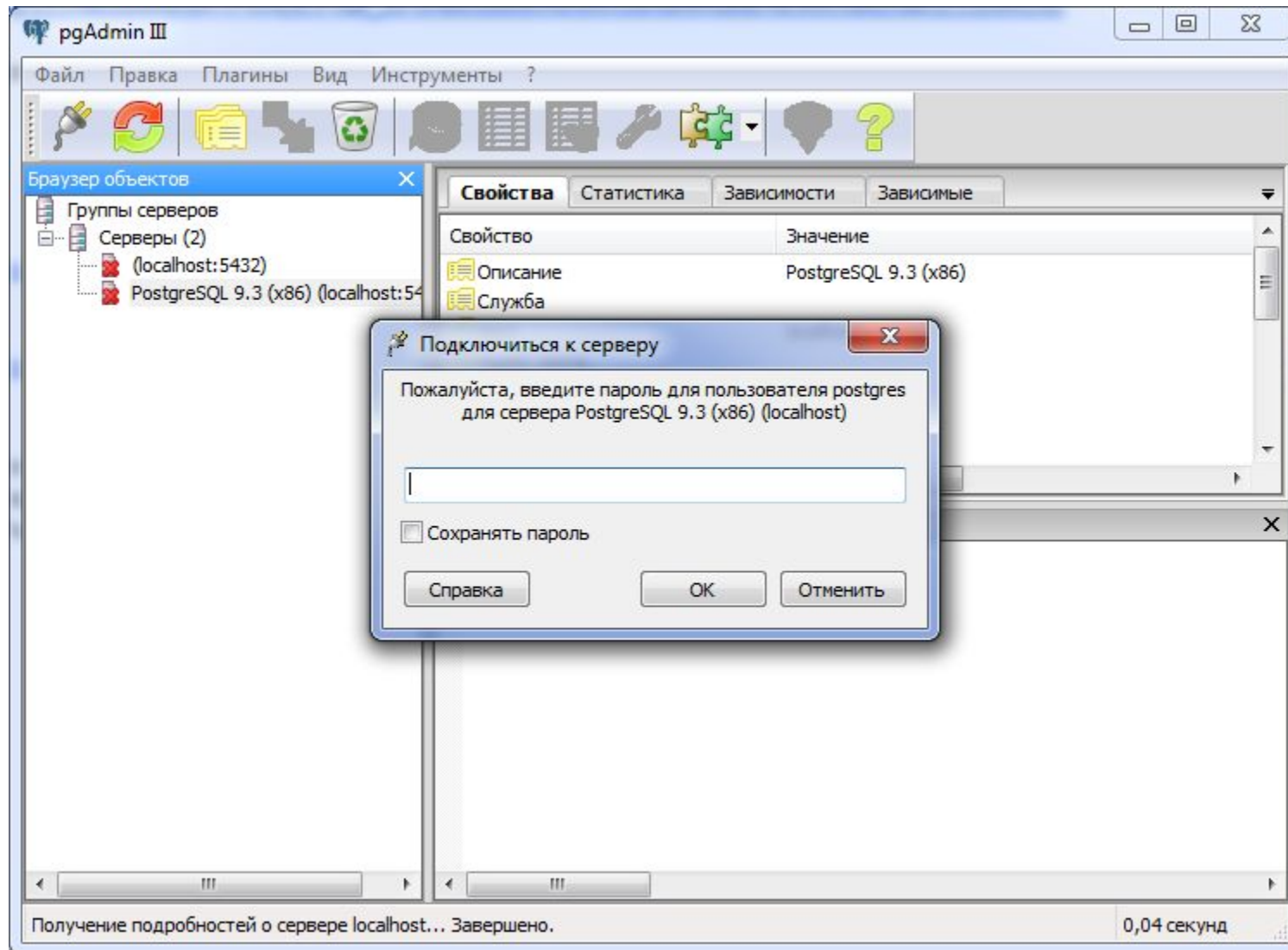
### Предыдущие релизы ODBC

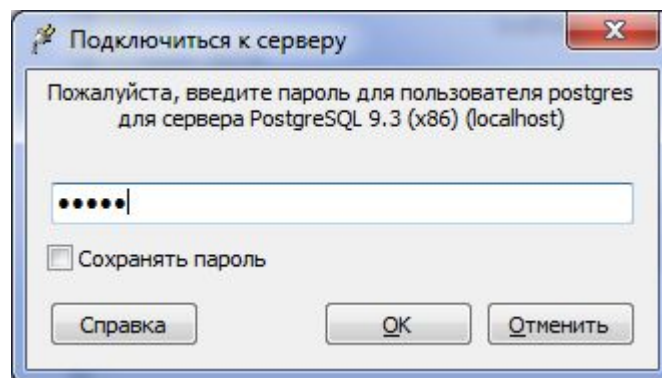
- » [ODBC драйвер 9.2.x для Windows от 03.06.2013 \(в виде MSI\)\(~1.5MB\)](#)
- » [ODBC драйвер 9.2.x для Windows x64 от 03.06.2013 \(в виде MSI\)\(~1.6MB\)](#)
- » [ODBC драйвер 9.1.x для Windows от 20.08.2012 \(в виде MSI\)\(~4.3MB\)](#)
- » [ODBC драйвер 9.1.x для Windows x64 от 20.08.2012 \(в виде MSI\)\(~1.7MB\)](#)
- » [ODBC драйвер 9.0.x для Windows от 08.07.2011 \(в виде MSI\)\(~4.3MB\)](#)
- » [ODBC драйвер 9.0.x для Windows x64 от 08.07.2011 \(в виде MSI\)\(~1.7MB\)](#)
- » [ODBC драйвер 8.4.x для Windows от 26.12.2009 \(в виде MSI\)\(~4.3MB\)](#)

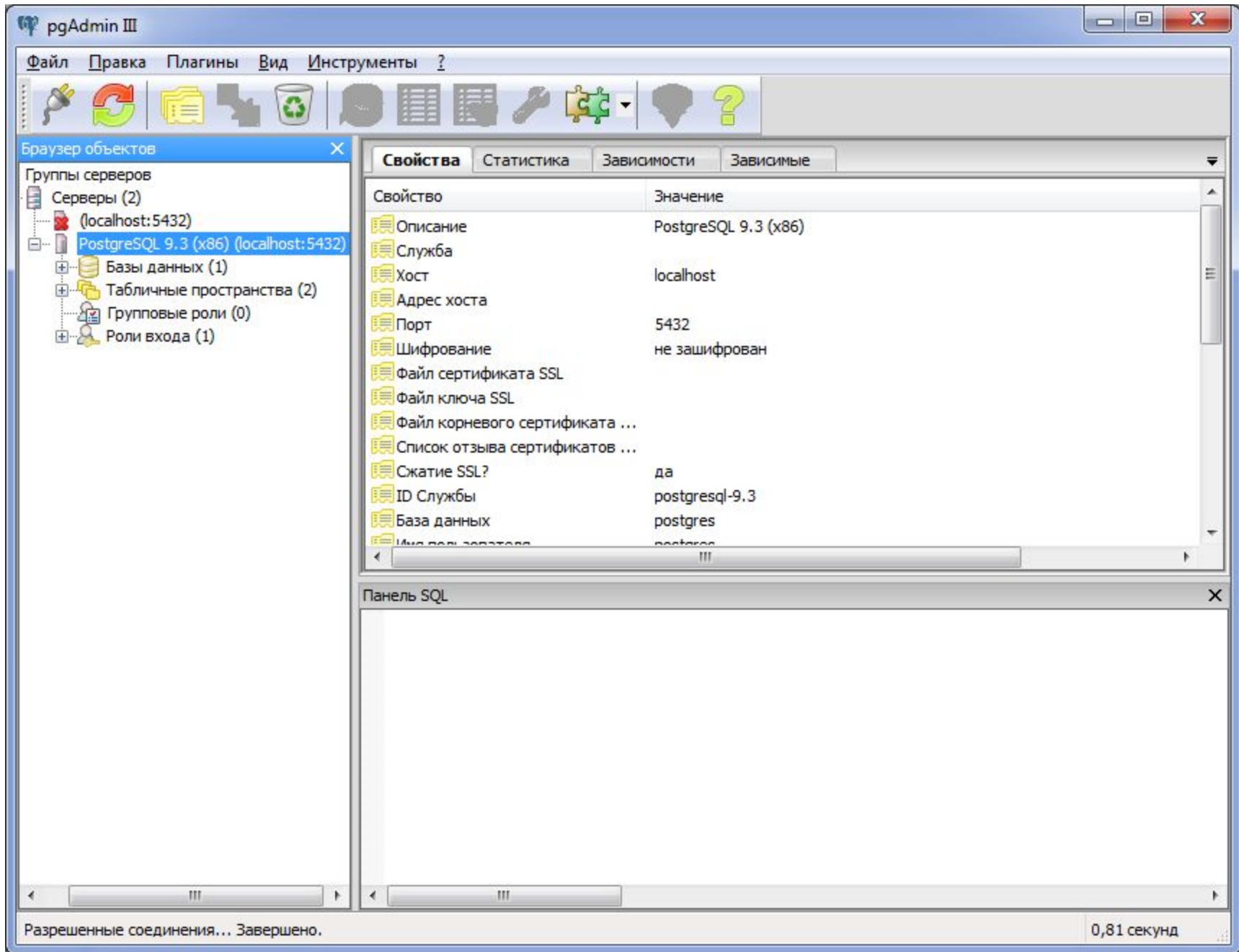
[< Создание триггеров в PostgreSQL](#)

[наверх](#)









Новая база данных...

Свойства | Определение | Переменные | Привилегии | Метки безопасности

Имя

OID

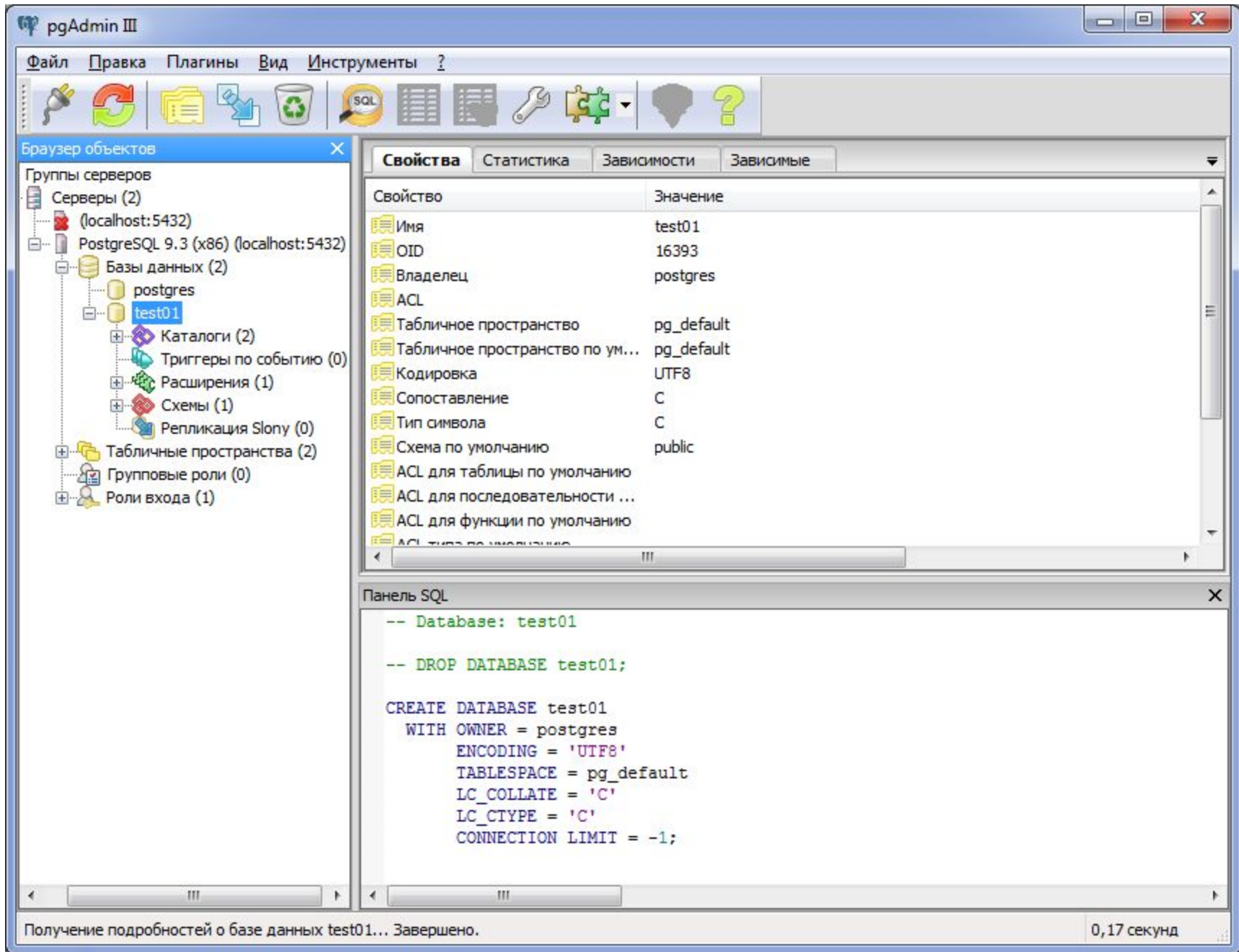
Владелец

Комментарий

Справка

Пожалуйста, укажите имя.





# pip install psycopg2

```
C:\Python33\Scripts>pip3 install psycopg2
DEPRECATION: Python 3.3 supported has been deprecated and support for it will be
dropped in the future. Please upgrade your Python.
Collecting psycopg2
  Downloading https://files.pythonhosted.org/packages/a6/b6/033ef03e87324b2d932d
3cfba7473c2b381a352510eb7a3c3a37a55cbb2f/psycopg2-2.7.5-cp33-cp33m-win32.whl (86
6kB)
    100% |#####| 870kB 2.5MB/s
Installing collected packages: psycopg2
Successfully installed psycopg2-2.7.5
```

# pip install psycopg2-binary

```
C:\Python33\Scripts>pip3 install psycopg2-binary
DEPRECATION: Python 3.3 supported has been deprecated and support for it will be
dropped in the future. Please upgrade your Python.
Collecting psycopg2-binary
  Downloading https://files.pythonhosted.org/packages/10/f0/315e888be02421a189d3
19d4eee21b3d3b144947a10e51c05c89ad07c482/psycopg2_binary-2.7.5-cp33-cp33m-win32.
whl (866kB)
    100% |#####| 870kB 2.4MB/s
Installing collected packages: psycopg2-binary
Successfully installed psycopg2-binary-2.7.5
```

# pip freeze

```
C:\Python33\Scripts>pip freeze
DEPRECATION: Python 3.3 support has been deprecated and support for it will be
dropped in the future. Please upgrade your Python.
beautifulsoup4==4.6.3
lxml==4.2.5
peewee==3.7.1
psycopy2==2.7.5
psycopy2-binary==2.7.5
```

# Чтение csv

```
import csv

with open('writers2.csv') as file:
    order=['name', 'surname', 'age']
    reader=csv.DictReader(file, fieldnames=order)

    for i in reader:
        print (i)
```

```
C:\Python33>python pg001.py
{'age': '44', 'surname': 'Romanov', 'name': 'Pert'}
{'age': '34', 'surname': 'Lenin', 'name': 'Ulodimir'}
{'age': '74', 'surname': 'Tolstoy', 'name': 'Lev'}
```

# Соединение с БД и создание таблицы

```
import csv
from peewee import *

db=PostgresqlDatabase(database='test01',user='postgres',password='12345',host='localhost')

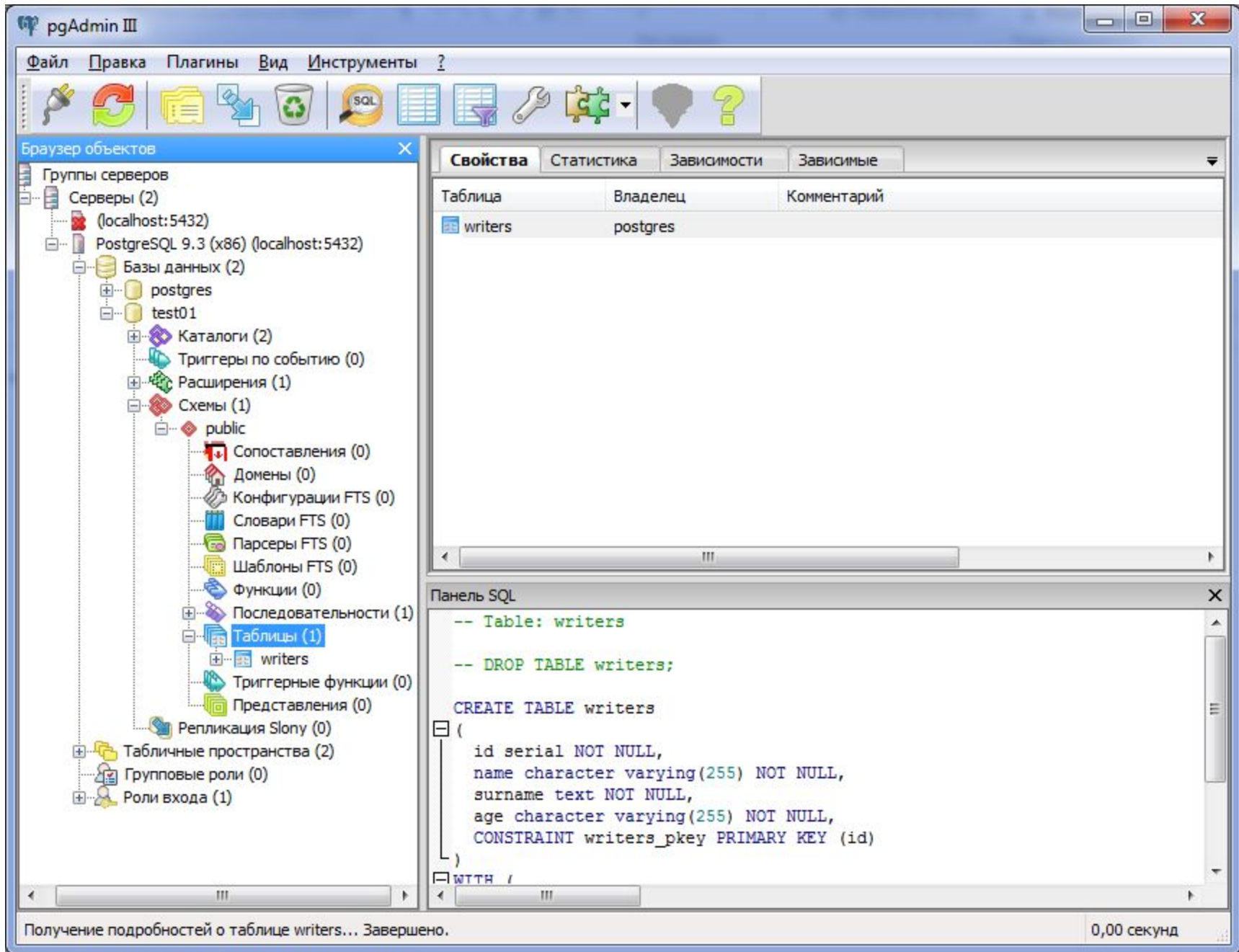
class Writers(Model):
    name=CharField(max_length=255)
    surname=TextField()
    age=CharField()

    class Meta:
        database=db

db.connect()
db.create_tables([Writers])

with open('writers2.csv') as file:
    order=['name','surname','age']
    reader=csv.DictReader(file, fieldnames=order)

    for i in reader:
        print (i)
```



```
db.connect()
db.create_tables([Writers])

with open('writers2.csv') as file:
    order=['name','surname','age']
    reader=csv.DictReader(file, fieldnames=order)

    writers=list(reader)

    for i in writers:
        writer=Writers(name=i['name'], surname=i['surname'],age=i['age'])
        writer.save()
```





Редактирование данных - PostgreSQL 9.3 (x86) (localhost:5432) - test01 - writers

Файл Правка Вид Инструменты ?

Не ограничено

	<b>id</b> [PK] serial	<b>name</b> character vai	<b>surname</b> text	<b>age</b> character vai
1	1	Pert	Romanov	44
2	2	Vlodimir	Lenin	34
3	3	Lev	Tolstoy	74
*				

Блокнот

3 строки.

# db.atomic снижение нагрузки при записи БД

```
db.connect()
db.create_tables([Writers])

with open('writers2.csv') as file:
    order=['name', 'surname', 'age']
    reader=csv.DictReader(file, fieldnames=order)

    writers=list(reader)

    with db.atomic():
        for i in writers:
            Writers.create(**i)
```

```
with open('writers2.csv') as file:
    order=['name','surname','age']
    reader=csv.DictReader(file, fieldnames=order)

    writers=list(reader)

    with db.atomic():
        for index in range(0,len(writers),100)
            Writers.insert_many(writers[index:index+100]).execute()
```

# Наследование в ORM

- `psql_db = PostgresqlDatabase('my_database', user='postgres')`
- **class BaseModel(Model):**
- *pass*
- **class Meta:**
- `database = psql_db`
- **class User(BaseModel):**
- `username = CharField()`

MySQL

# Коннектор

- <https://dev.mysql.com/downloads/connector/python/2.0.html>

## Generally Available (GA) Releases

### Connector/Python 2.0.5

Select Version:

2.0.5 ▼

Looking for the latest GA version?

Select Operating System:

Microsoft Windows ▼

**Windows (Architecture Independent), MSI Installer  
Python 2.7**

(mysql-connector-python-2.0.5-py2.7.msi)

2.0.5

156.0K

[Download](#)

MD5: 70d9f9f830b7539ddc79b39798c0a8bb | [Signature](#)

**Windows (Architecture Independent), MSI Installer  
Python 3.3**

(mysql-connector-python-2.0.5-py3.3.msi)

2.0.5

156.0K

[Download](#)

MD5: 2fcea6b27dabd0c3372b83604cd9c125 | [Signature](#)

**Windows (Architecture Independent), MSI Installer  
Python 3.4**

(mysql-connector-python-2.0.5-py3.4.msi)

2.0.5

156.0K

[Download](#)

MD5: 094e3729c33cb7dbe43a8e7c3d7bd198 | [Signature](#)

<https://www.mysql.com/downloads/>

---

MySQL Community Edition (GPL)

[Community \(GPL\) Downloads »](#)



# MySQL Community Downloads

## **MySQL Community Server** (GPL)

(Current Generally Available Release: 8.0.13)

MySQL Community Server is the world's most popular open source database.

[DOWNLOAD](#)

---

## Generally Available (GA) Releases

### MySQL Community Server 8.0.13

Select Operating System:

Microsoft Windows

[Looking for previous GA versions?](#)

#### Recommended Download:

## MySQL Installer for Windows

All MySQL Products. For All Windows Platforms.  
In One Package.



Starting with MySQL 5.6 the MySQL Installer package replaces the standalone MSI packages.

**Windows (x86, 32 & 64-bit), MySQL Installer MSI**

[Go to Download Page >](#)

#### Other Downloads:

**Windows (x86, 64-bit), ZIP Archive**

8.0.13

192.3M

[Download](#)

(mysql-8.0.13-winx64.zip)

MD5: 34a5983273314c99fdb4a17b01d5859 | [Signature](#)

**Windows (x86, 64-bit), ZIP Archive**

8.0.13

274.5M

[Download](#)

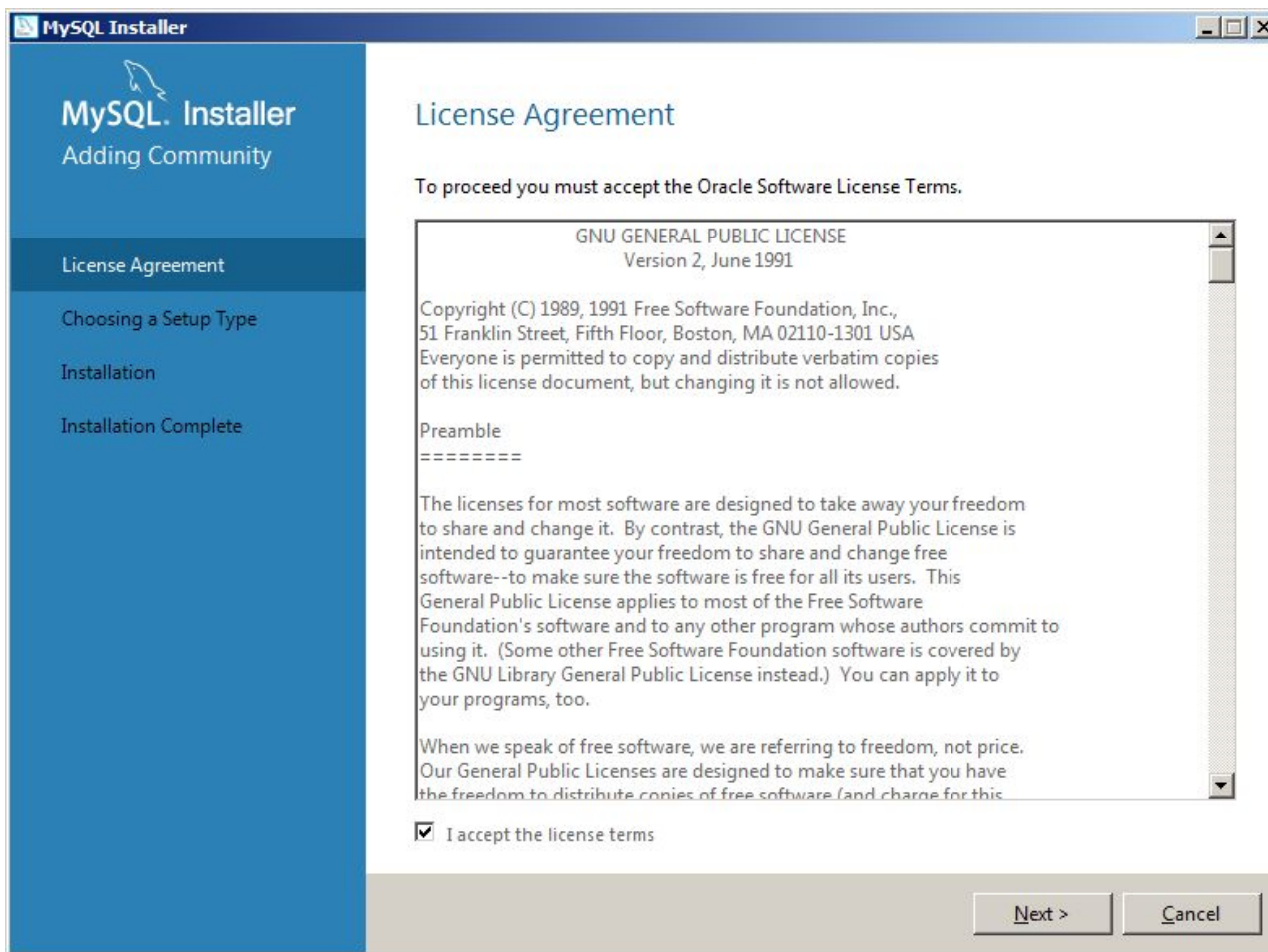
**Debug Binaries & Test Suite**

(mysql-8.0.13-winx64-debug-test.zip)

MD5: 459f7a900a7ec15171c85f7bc3506d03 | [Signature](#)

[Looking for previous GA versions?](#)

- [MySQL Community Server 5.7 »](#)
- [MySQL Community Server 5.6 »](#)
- [MySQL Community Server 5.5 »](#)
- [Archived versions »](#)



MySQL Installer












# MySQL. Installer

Adding Community

- License Agreement
- Choosing a Setup Type
- Installation**
- Product Configuration
- Installation Complete

## Installation

The following products will be installed.

Product	Status	Progress	Notes
 MySQL Server 5.6.42	Ready to Install		
 MySQL Workbench 8.0.13	Ready to Install		
 MySQL Notifier 1.1.7	Ready to Install		
 MySQL For Excel 1.3.7	Ready to Install		
 Connector/ODBC 8.0.13	Ready to Install		
 Connector/C++ 8.0.13	Ready to Install		
 Connector/J 8.0.13	Ready to Install		
 Connector/NET 8.0.13	Ready to Install		
 MySQL Connector/C 6.1.11	Ready to Install		
 MySQL Documentation 5.6.42	Ready to Install		
 Samples and Examples 5.6.42	Ready to Install		

Click [Execute] to install the following packages.

< Back    Execute    Cancel

MySQL Installer












# MySQL. Installer

Adding Community

- License Agreement
- Choosing a Setup Type
- Installation**
- Product Configuration
- Installation Complete

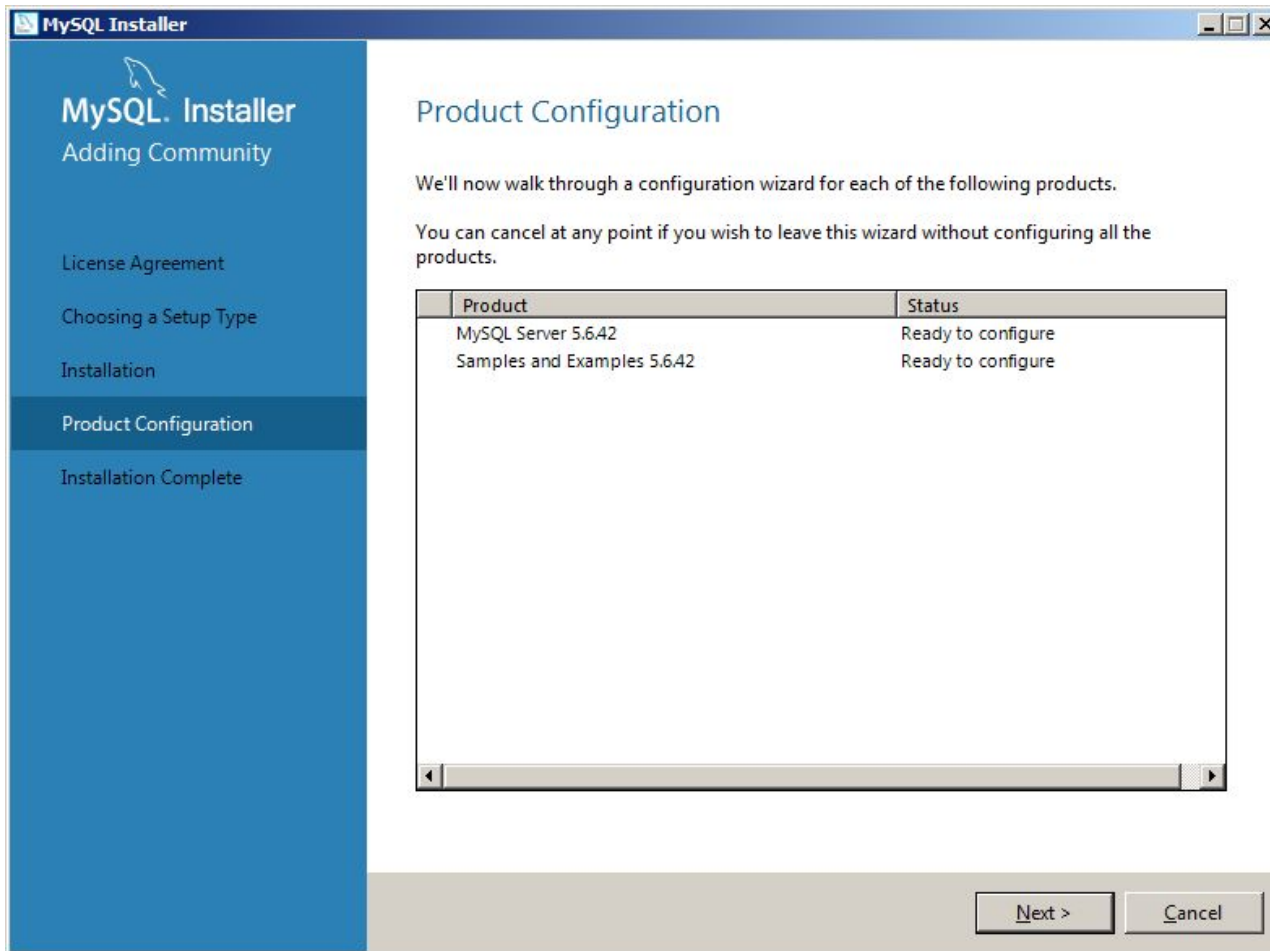
## Installation

The following products will be installed.

Product	Status	Progress	Notes
 MySQL Server 5.6.42	Complete		
 MySQL Workbench 8.0.13	Complete		
 MySQL Notifier 1.1.7	Complete		
 MySQL For Excel 1.3.7	Complete		
 Connector/ODBC 8.0.13	Complete		
 Connector/C++ 8.0.13	Complete		
 Connector/J 8.0.13	Complete		
 Connector/NET 8.0.13	Complete		
 MySQL Connector/C 6.1.11	Complete		
 MySQL Documentation 5.6.42	Complete		
 Samples and Examples 5.6.42	Complete		

[Show Details >](#)

< Back    Next >    Cancel



MySQL Installer

MySQL Server 5.6.42

Type and Networking

Accounts and Roles

Windows Service

Apply Configuration

### Type and Networking

Server Configuration Type

Choose the correct server configuration type for this MySQL Server installation. This setting will define how much system resources are assigned to the MySQL Server instance.

Config Type:

Connectivity

Use the following controls to select how you would like to connect to this server.

TCP/IP      Port:

Open Windows Firewall port for network access

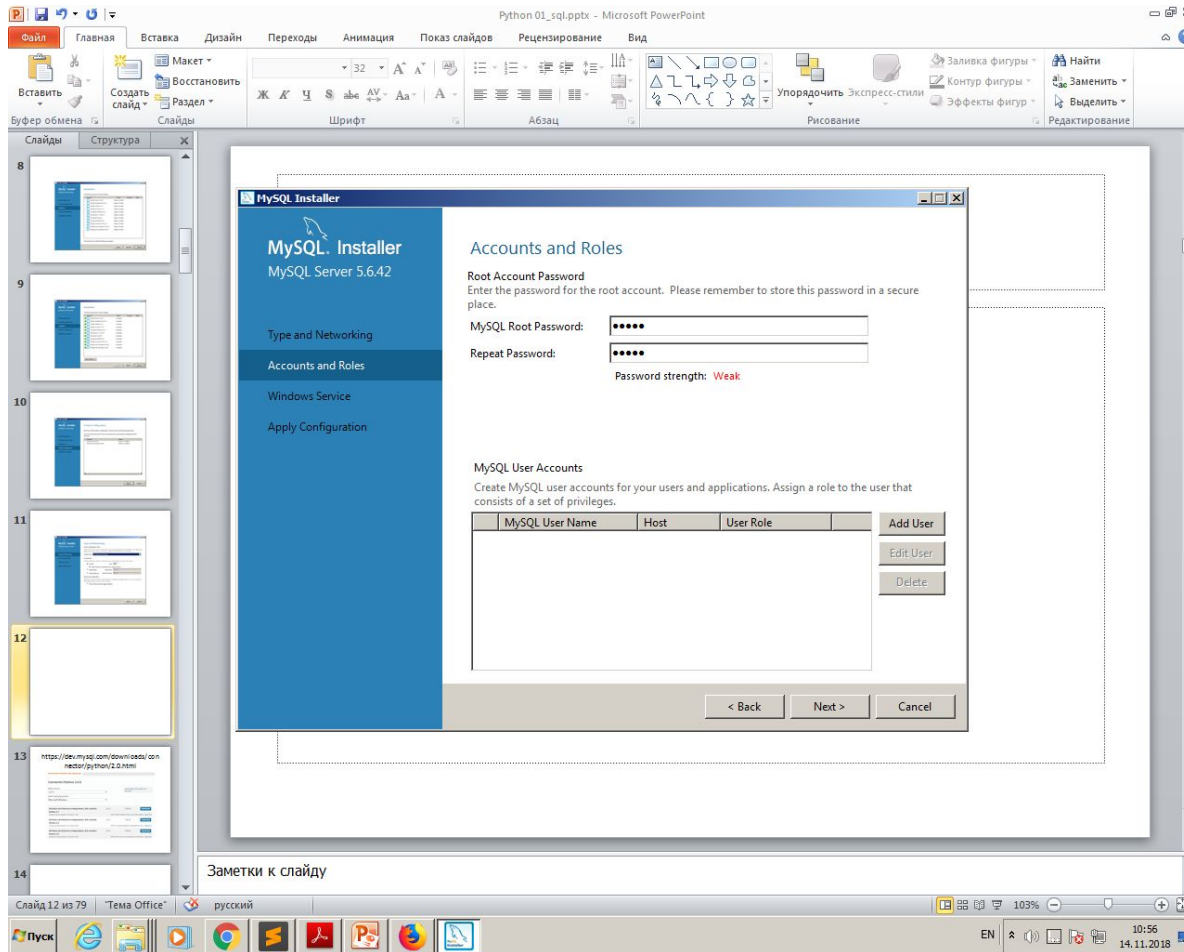
Named Pipe      Pipe Name:

Shared Memory      Memory Name:

Advanced Configuration

Select the check box below to get additional configuration pages where you can set advanced and logging options for this server instance.


Show Advanced and Logging Options





**MySQL User Details** [X]

Please specify the user name, password, and database role.

 User Name:

Host:

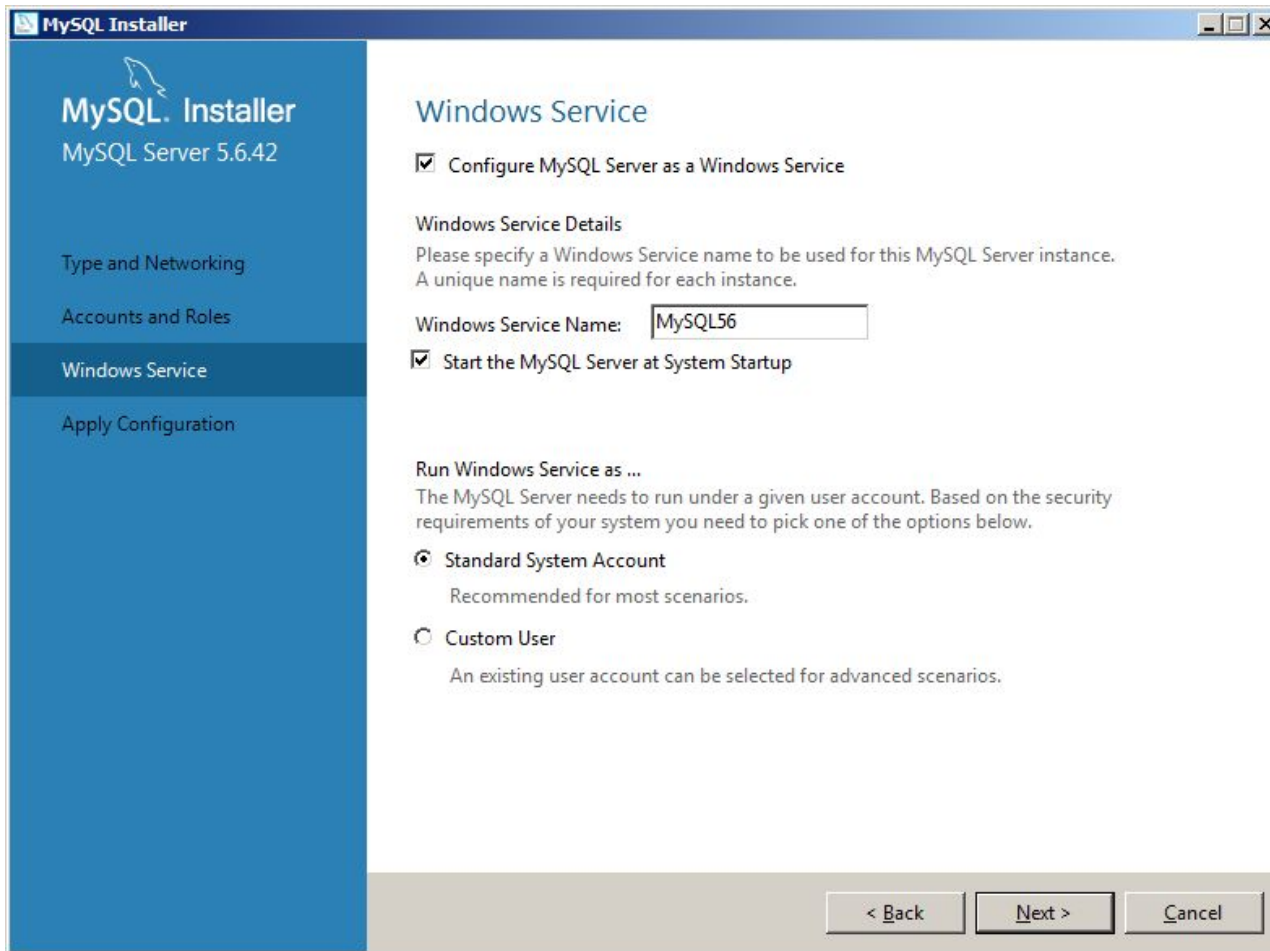
Role:

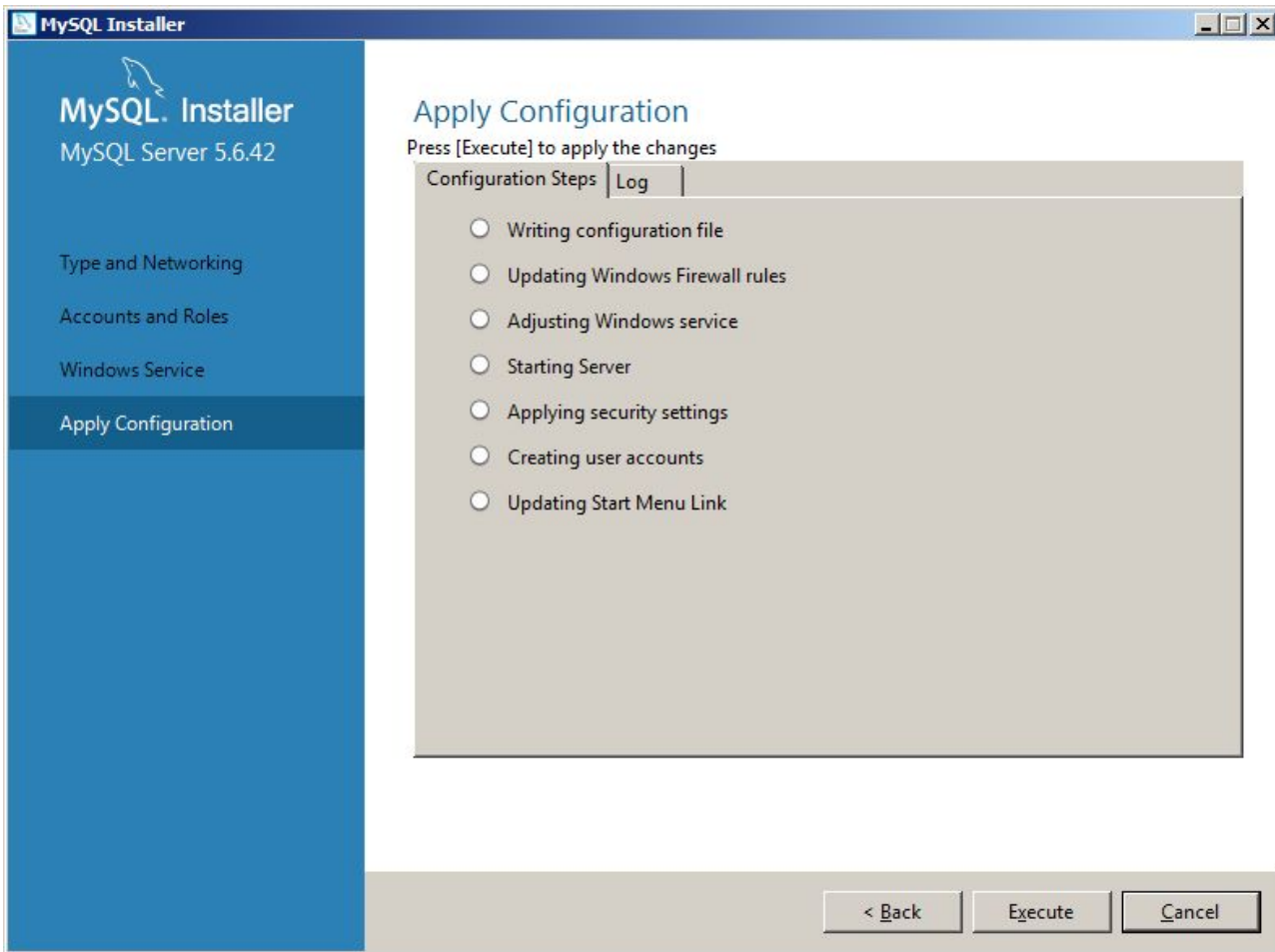
Authentication:  MySQL

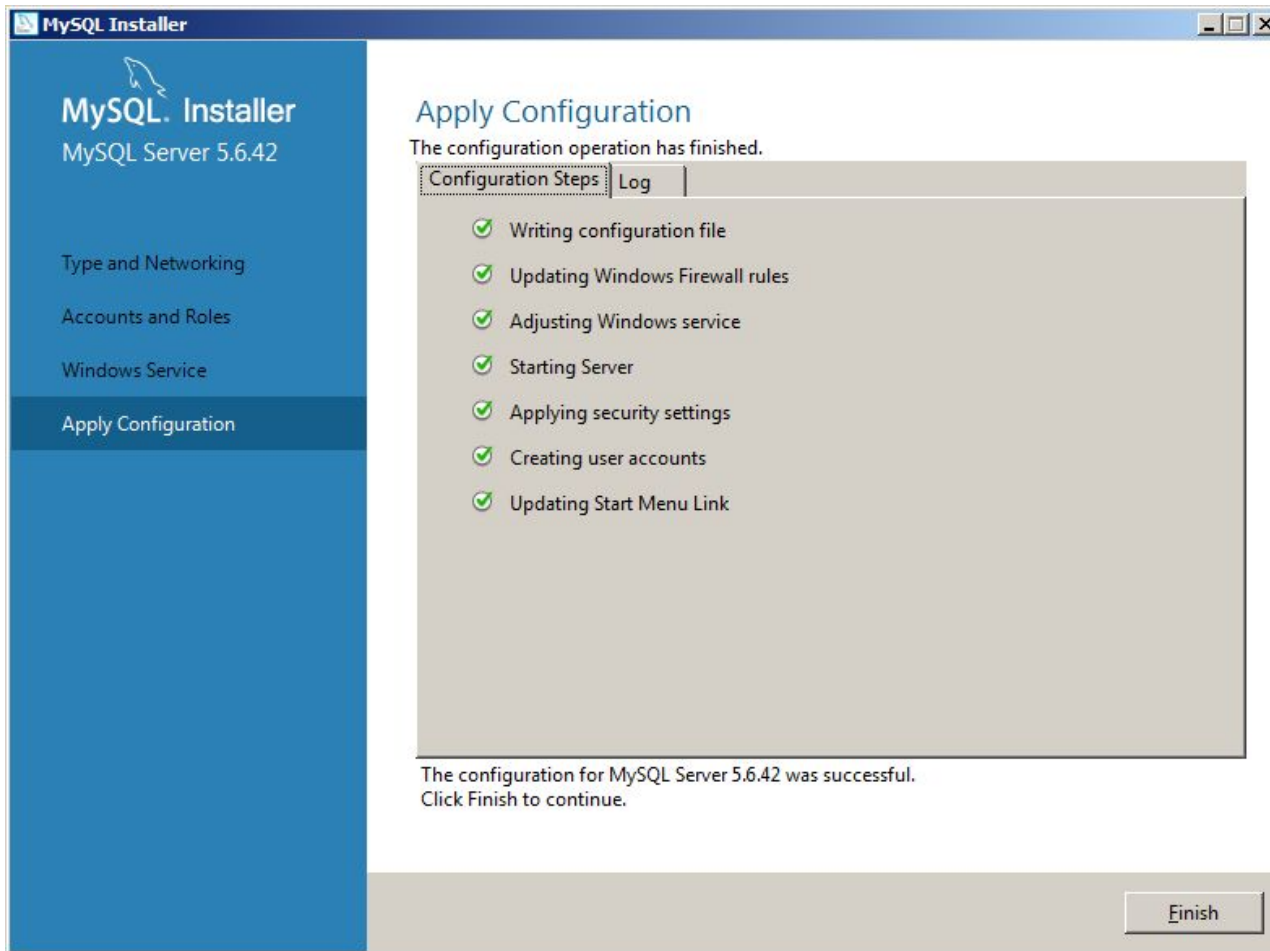
Password:

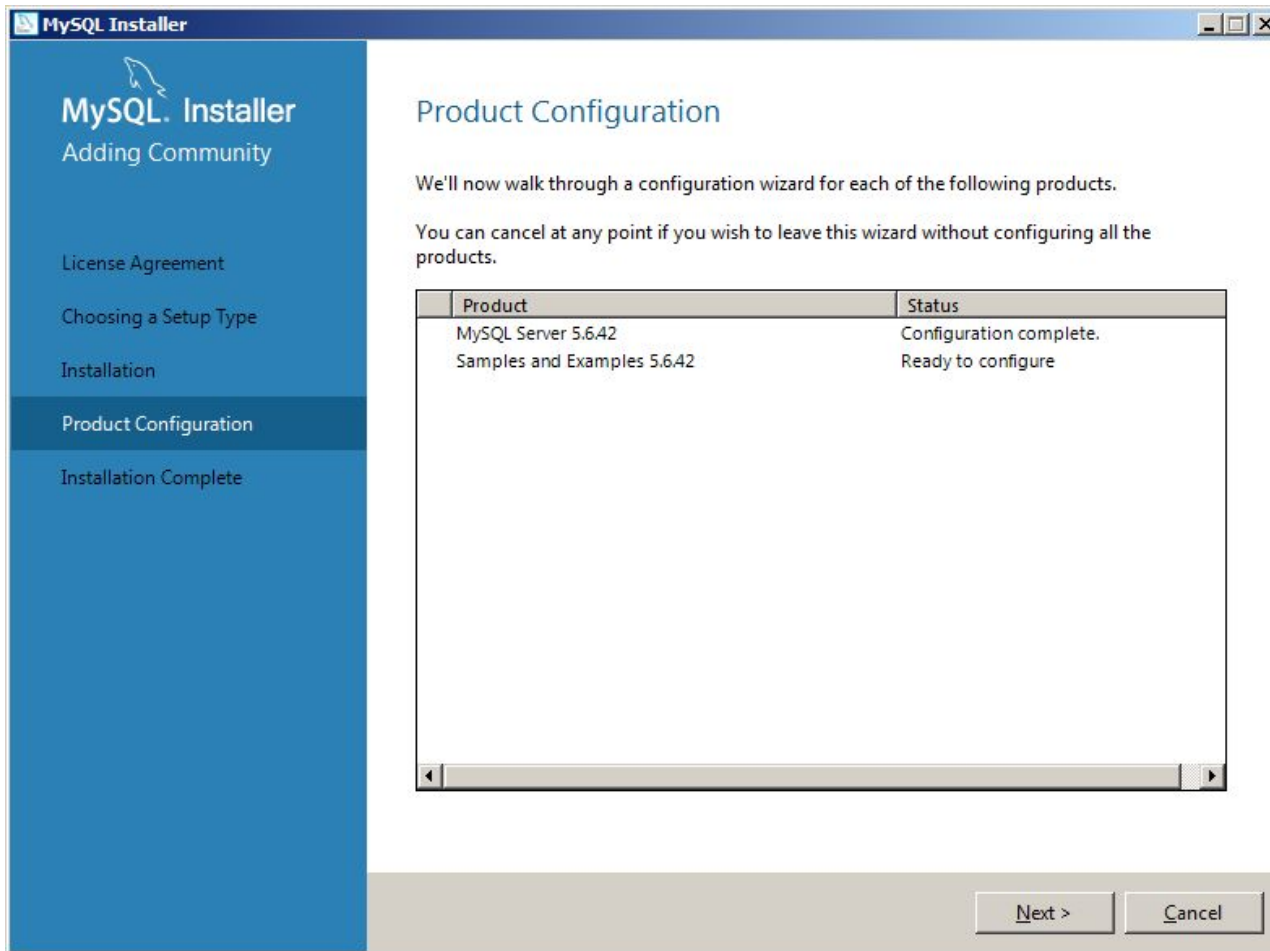
Confirm Password:

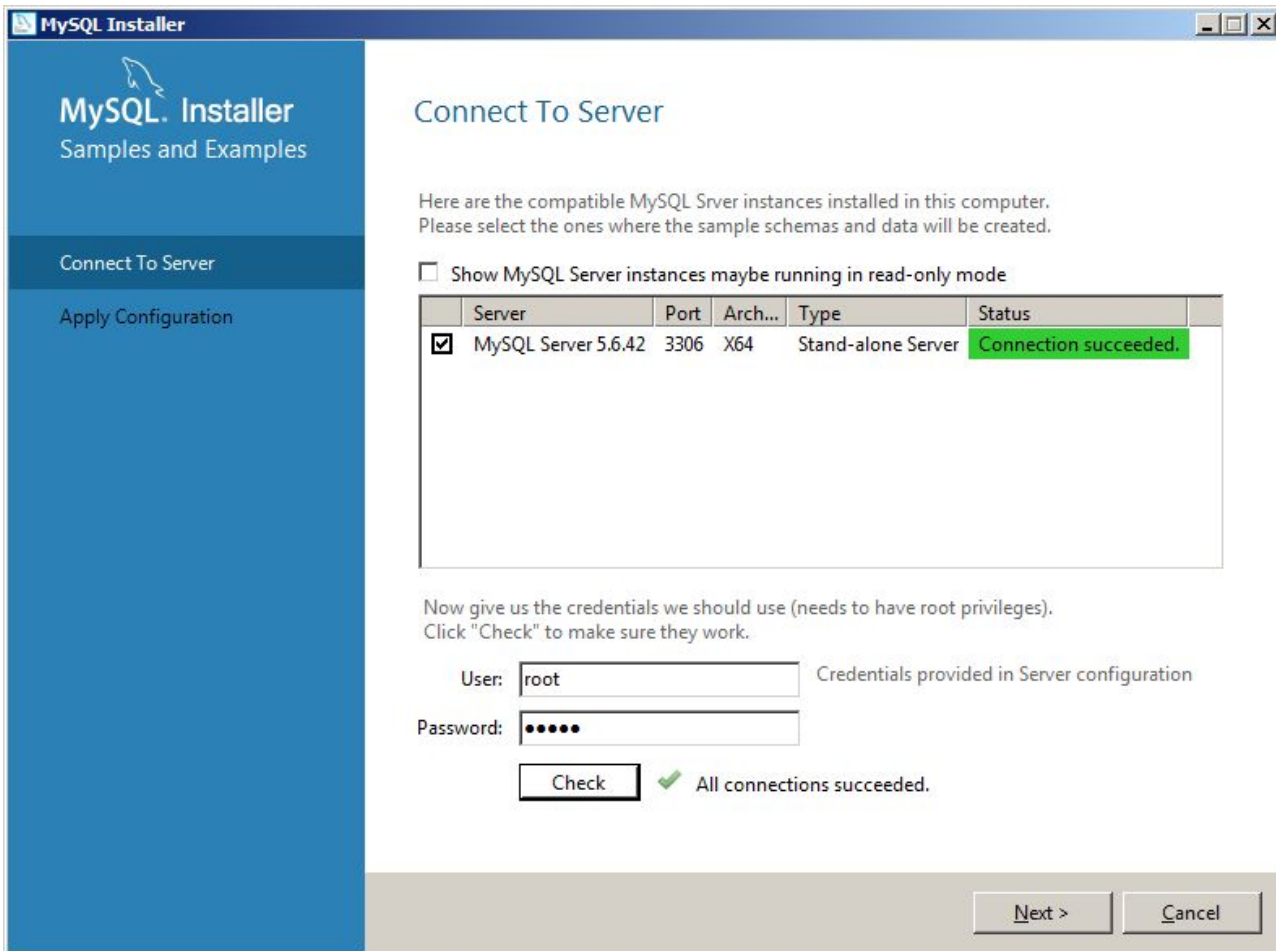
Password Strength: **Weak**

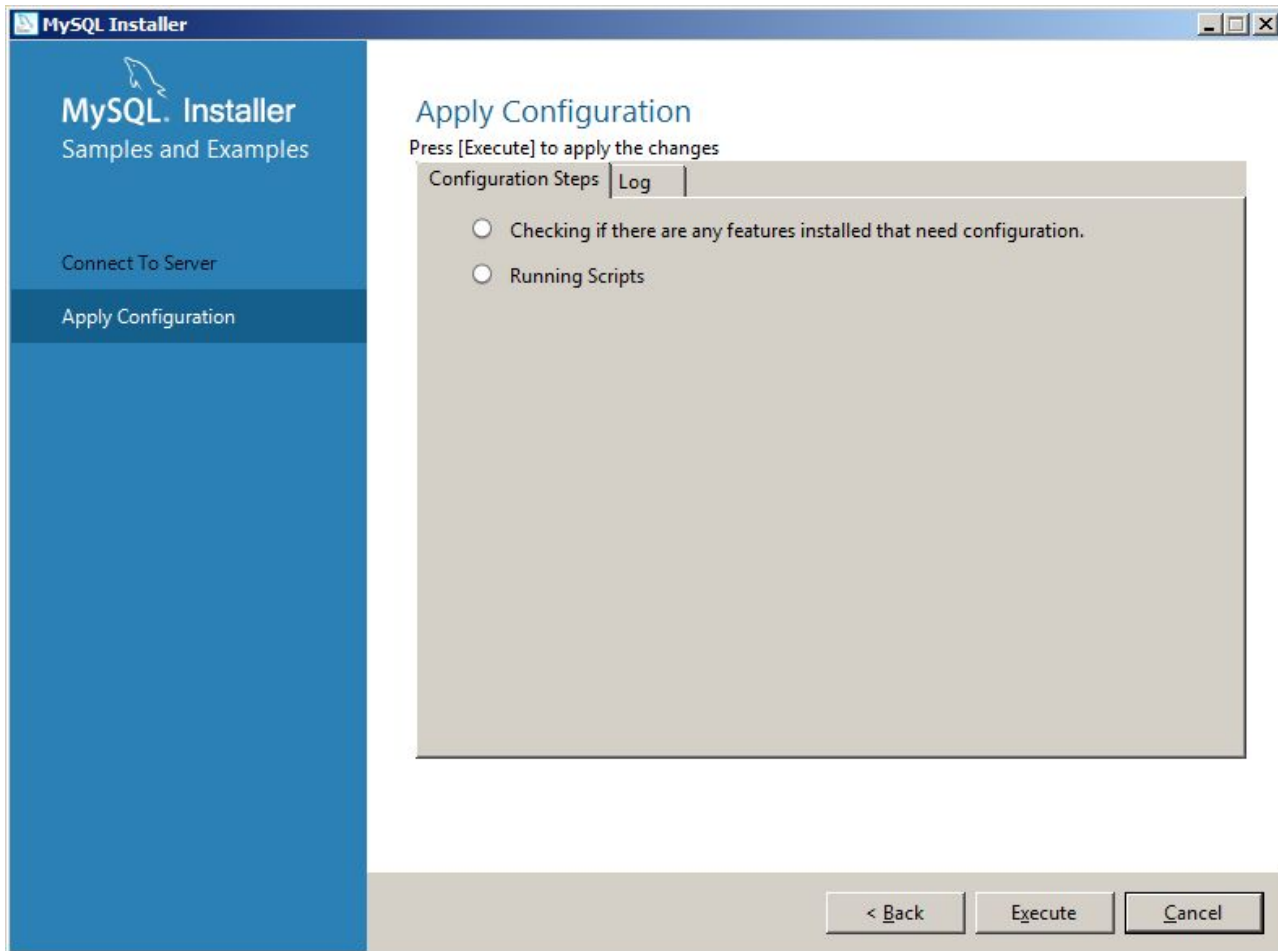


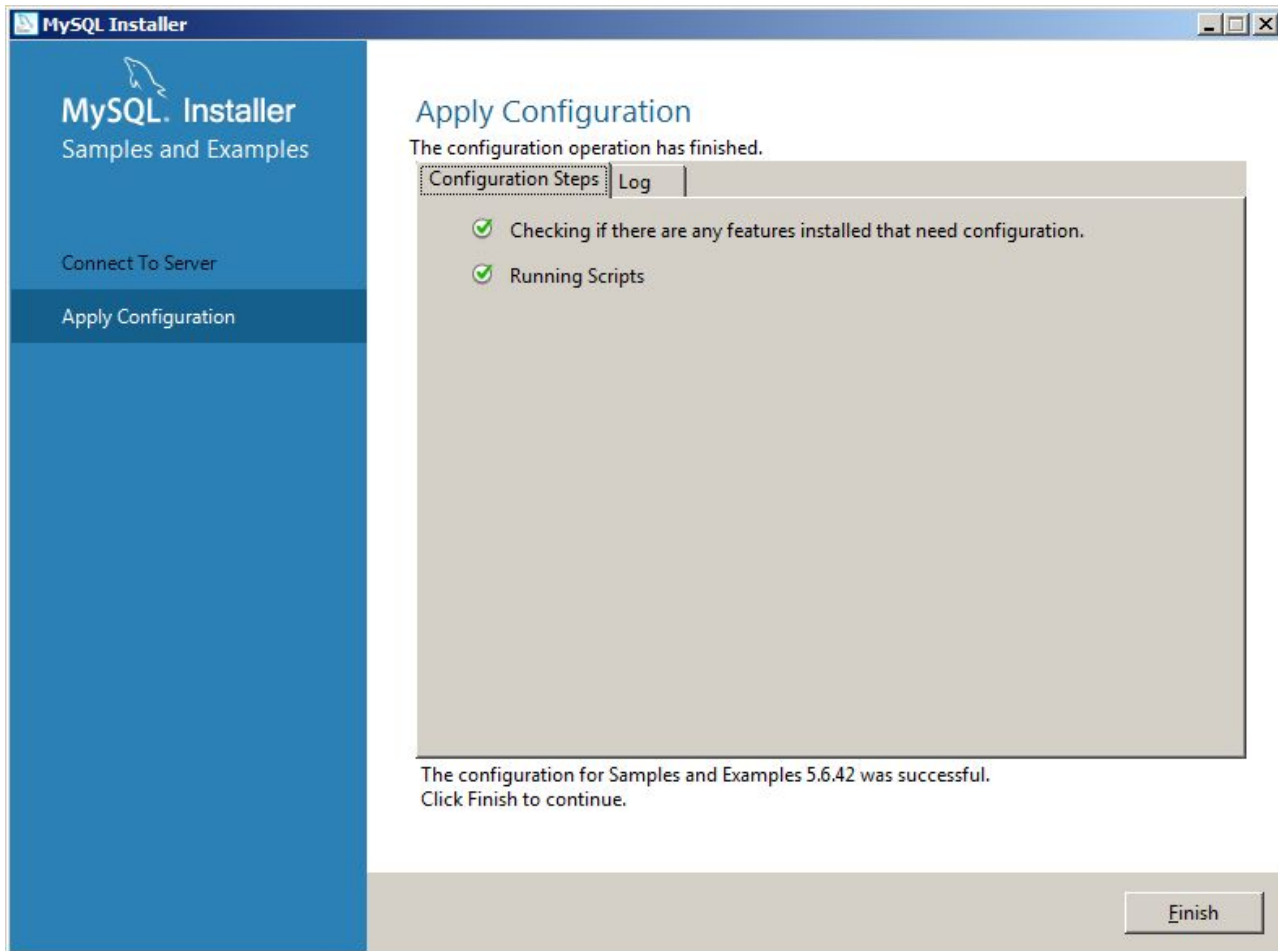














MySQL Installer

# MySQL. Installer

Adding Community

- License Agreement
- Choosing a Setup Type
- Installation
- Product Configuration**
- Installation Complete

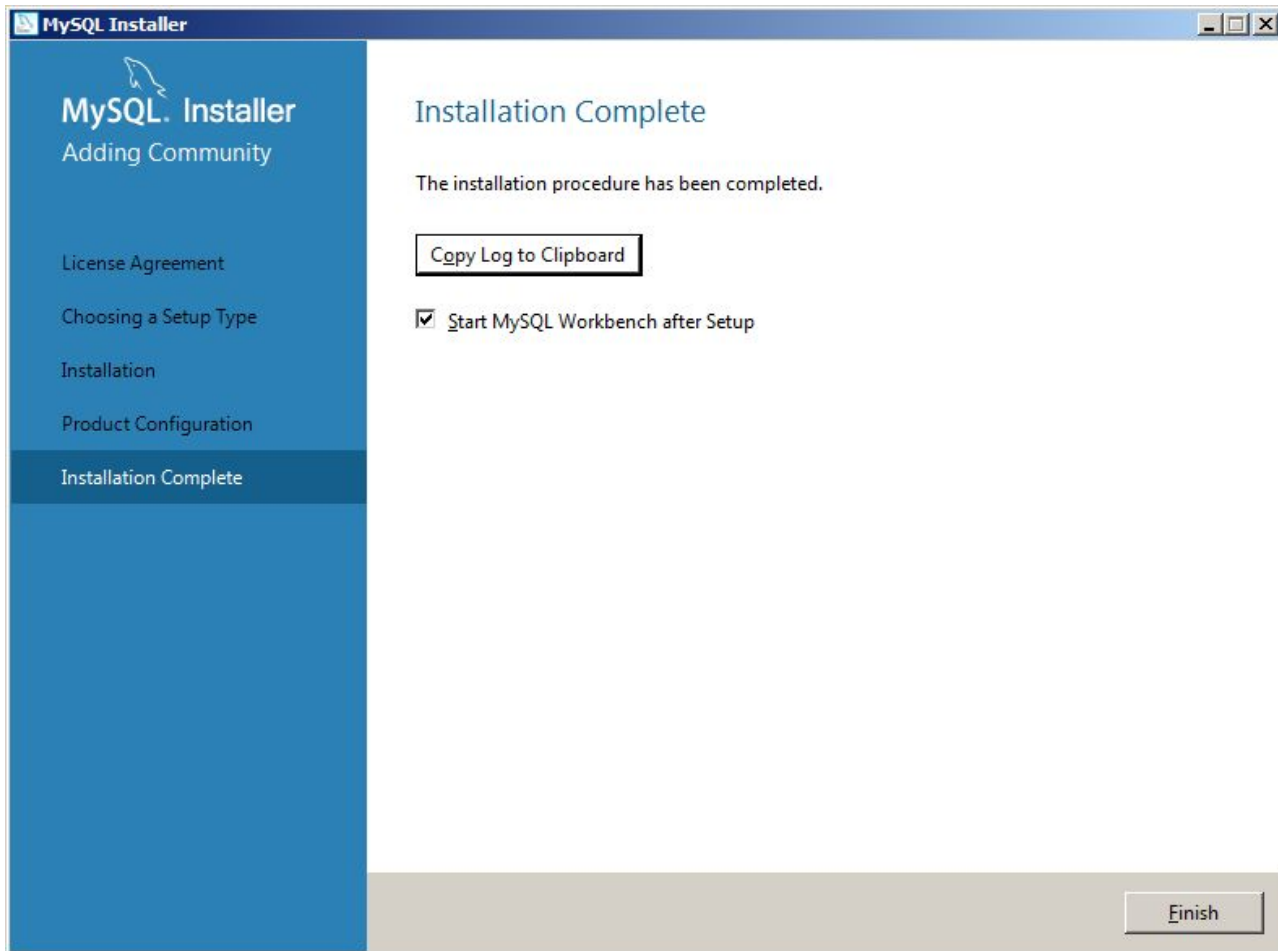
## Product Configuration

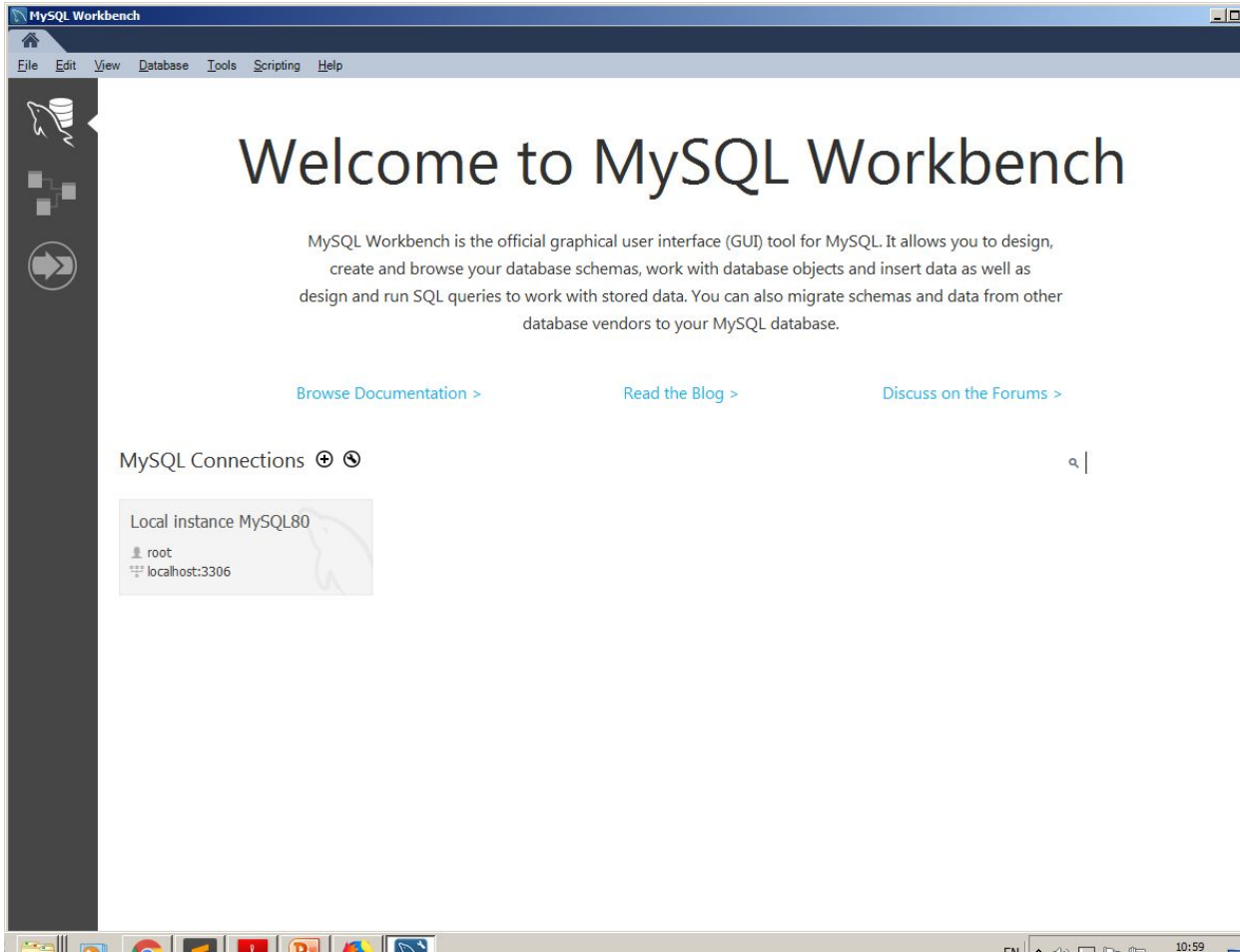
We'll now walk through a configuration wizard for each of the following products.

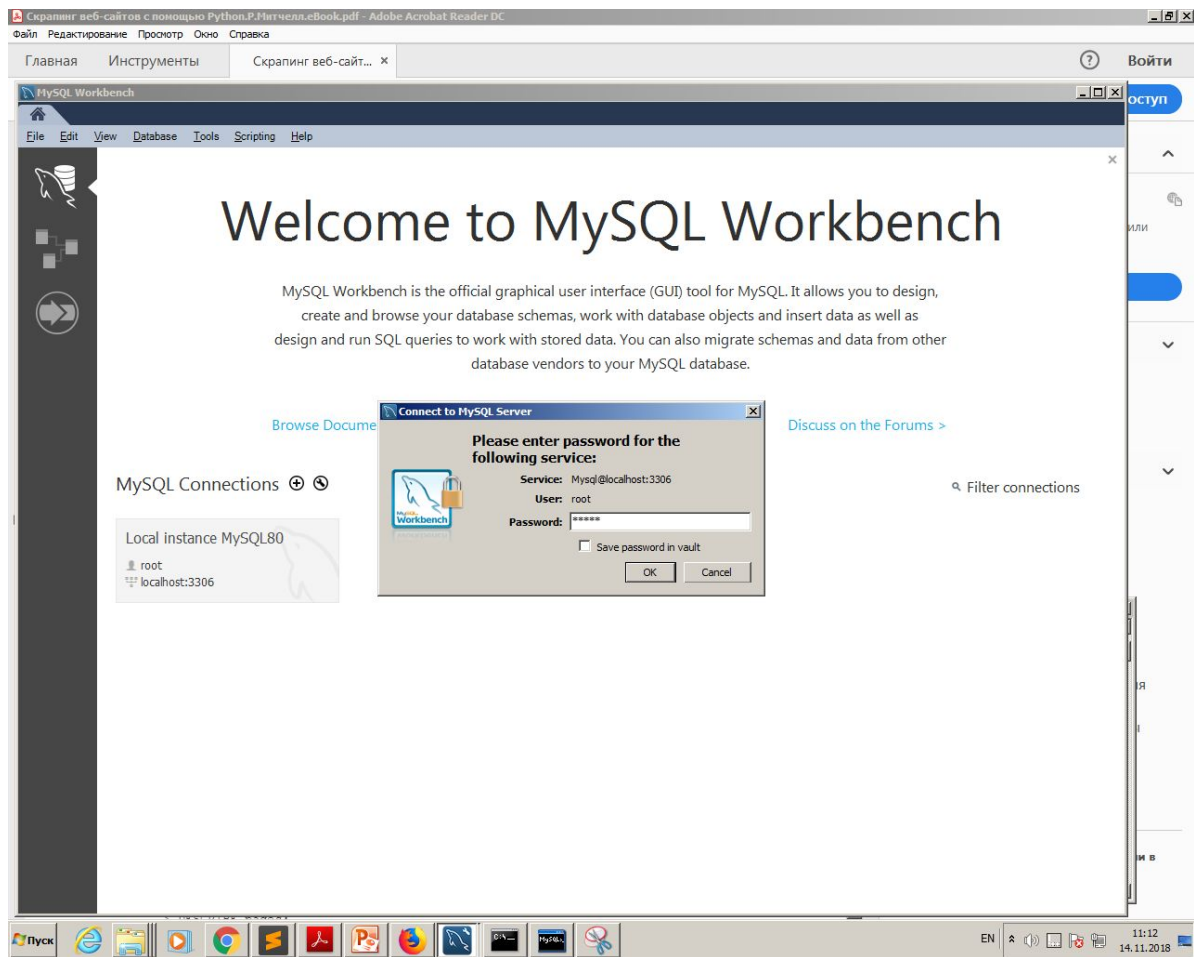
You can cancel at any point if you wish to leave this wizard without configuring all the products.

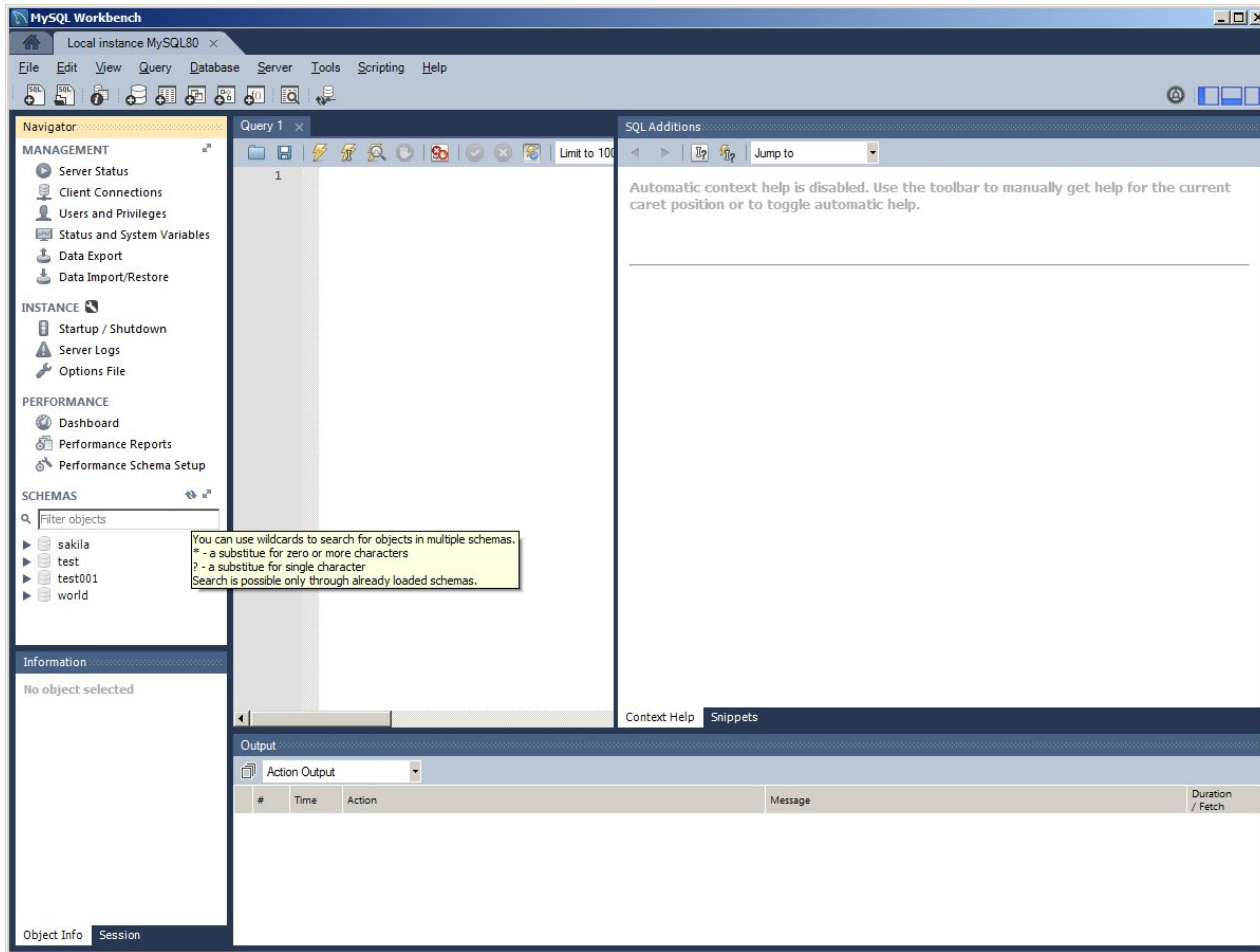
Product	Status
MySQL Server 5.6.42	Configuration complete.
Samples and Examples 5.6.42	Configuration complete.

Next >      Cancel









# MySQL Connectors

MySQL provides standards-based drivers for JDBC, ODBC, and .Net enabling developers to build applications that allow developers to embed MySQL directly into their applications.

Developed by MySQL	
ADO.NET Driver for MySQL (Connector/NET)	<a href="#">Download</a>
ODBC Driver for MySQL (Connector/ODBC)	<a href="#">Download</a>
JDBC Driver for MySQL (Connector/J)	<a href="#">Download</a>
Node.js Driver for MySQL (Connector/Node.js)	<a href="#">Download</a>
Python Driver for MySQL (Connector/Python)	<a href="#">Download</a>
C++ Driver for MySQL (Connector/C++)	<a href="#">Download</a>
C Driver for MySQL (Connector/C)	<a href="#">Download</a>
C API for MySQL (mysqlclient)	<a href="#">Download</a>

## Generally Available (GA) Releases

### Connector/Python 8.0.13

Select Operating System:

Microsoft Windows ▼

[Looking for previous GA versions?](#)

Select OS Version:

Windows (x86, 32-bit) ▼

<b>MSI Installer</b> (mysql-connector-python-8.0.13-py3.7-windows-x86-32bit.msi)	8.0.13	276.0K	<a href="#">Download</a> MD5: fe9f28e6c4d9bcabc77d536824064641   <a href="#">Signature</a>
<b>MSI Installer, Python 2.7</b> (mysql-connector-python-8.0.13-py2.7-windows-x86-32bit.msi)	8.0.13	276.0K	<a href="#">Download</a> MD5: 81858b9c229c65fe742019f58215ce52   <a href="#">Signature</a>
<b>MSI Installer, Python 3.5</b> (mysql-connector-python-8.0.13-py3.5-windows-x86-32bit.msi)	8.0.13	276.0K	<a href="#">Download</a> MD5: cb0329475464a2e1f2366bac375145e2   <a href="#">Signature</a>
<b>MSI Installer</b> (mysql-connector-python-8.0.13-py3.6-windows-x86-32bit.msi)	8.0.13	276.0K	<a href="#">Download</a> MD5: f7e84fcec13d60939576a750ca37acde   <a href="#">Signature</a>

## Generally Available (GA) Releases

### Connector/Python 2.1.8

Select Version:

2.1.8 ▼

Select Operating System:

Microsoft Windows ▼

Select OS Version:

Windows (x86, 32-bit) ▼

Looking for the latest GA version?

<b>MSI Installer</b> (mysql-connector-python-2.1.8-py3.6-windows-x86-32bit.msi)	2.1.8	200.0K	<a href="#">Download</a> MD5: 255911f8659a9b942ba3c9674cd6476a   <a href="#">Signature</a>
<b>MSI Installer, Python 2.7</b> (mysql-connector-python-2.1.8-py2.7-windows-x86-32bit.msi)	2.1.8	200.0K	<a href="#">Download</a> MD5: 84de80bf841f3df72b3a2bd18e37446e   <a href="#">Signature</a>
<b>MSI Installer, Python 3.4</b> (mysql-connector-python-2.1.8-py3.4-windows-x86-32bit.msi)	2.1.8	200.0K	<a href="#">Download</a> MD5: 884918ca997369aecc1adfb272e7e91f   <a href="#">Signature</a>
<b>MSI Installer, Python 3.5</b> (mysql-connector-python-2.1.8-py3.5-windows-x86-32bit.msi)	2.1.8	200.0K	<a href="#">Download</a> MD5: 46aded919353b4f4719f1ff94064ac88   <a href="#">Signature</a>



We suggest that you use the MD5 checksums and GnuPG signatures to verify the integrity of the packages you download.



# https://dev.mysql.com/downloads/connector/python/2.0.html

## Generally Available (GA) Releases

### Connector/Python 2.0.5

Select Version:

2.0.5

Looking for the latest GA version?

Select Operating System:

Microsoft Windows

**Windows (Architecture Independent), MSI Installer**  
**Python 2.7**

(mysql-connector-python-2.0.5-py2.7.msi)

2.0.5

156.0K

[Download](#)

MD5: 70d9f9f830b7539ddc79b39798c0a8bb | [Signature](#)

**Windows (Architecture Independent), MSI Installer**  
**Python 3.3**

(mysql-connector-python-2.0.5-py3.3.msi)

2.0.5

156.0K

[Download](#)

MD5: 2fcea6b27dabd0c3372b83604cd9c125 | [Signature](#)

**Windows (Architecture Independent), MSI Installer**  
**Python 3.4**

(mysql-connector-python-2.0.5-py3.4.msi)

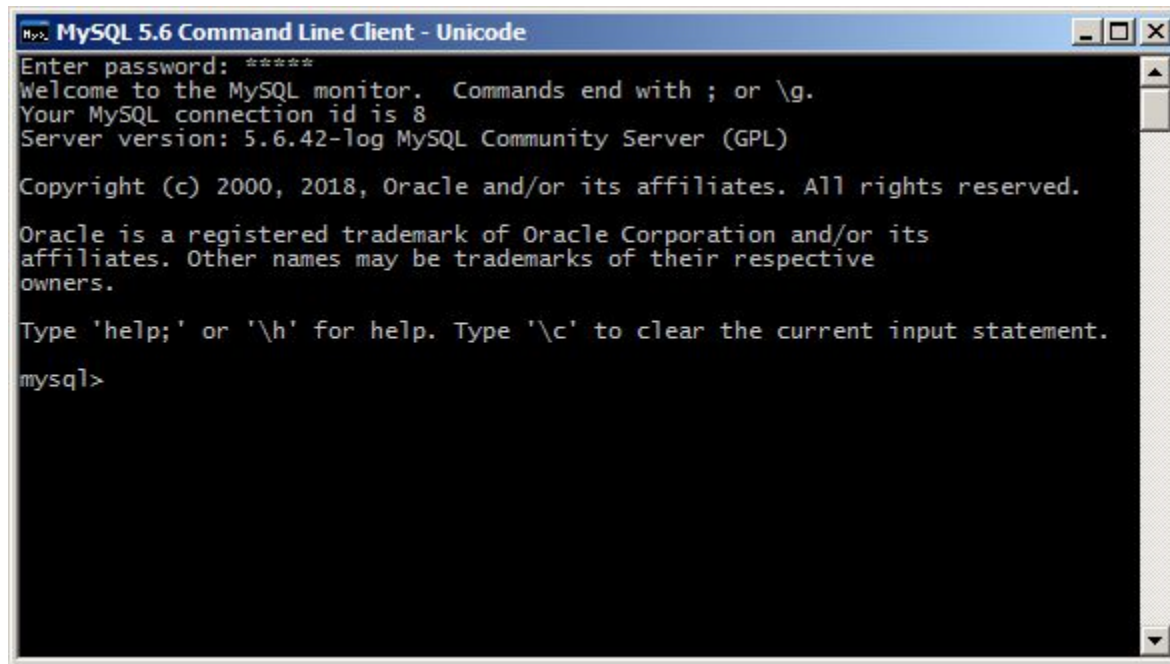
2.0.5

156.0K

[Download](#)

MD5: 094e3729c33cb7dbe43a8e7c3d7bd198 | [Signature](#)

# Работа в командной строке



```
MySQL 5.6 Command Line Client - Unicode
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 5.6.42-log MySQL Community Server (GPL)

Copyright (c) 2000, 2018, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

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

mysql>
```

```
mysql> CREATE DATABASE test001;
Query OK, 1 row affected (0.00 sec)

mysql> USE test001
Database changed
mysql> CREATE TABLE pages;
ERROR 1113 (42000): A table must have at least 1 column
mysql>
```

```
mysql> use test001
Database changed
mysql> create table pages(id BIGINT(7), title VARCHAR(200), content VARCHAR(500), PRIMARY KEY(id));
Query OK, 0 rows affected (0.08 sec)
```

```
mysql> DESCRIBE pages
->
->
->
->
->
->
->
->
-> ;
```

Field	Type	Null	Key	Default	Extra
id	bigint(7)	NO	PRI	0	
title	varchar(200)	YES		NULL	
content	varchar(500)	YES		NULL	

```
3 rows in set (0.03 sec)
```

Navigator

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

- test
- test001
  - Tables
    - pages
      - Columns
      - Indexes
      - Foreign Keys
      - Triggers
    - Views
    - Stored Procedures

Query 1 Administration - Server Logs pages x

```
SELECT * FROM test001.pages;
```

Result Grid


id	title	content
NULL	NULL	NULL

SQL Additions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

pages 1 x Apply Revert Context Help Snippets



```
mysql> INSE  
ey')  
-> ;  
Query OK, 1  
mysql>
```



Result Grid  Filter Rows:

id	title	content
1	Barmaley	On pugaet detey
NULL	NULL	NULL

Result Grid  
Form Editor  
Field Types  
Query Stats

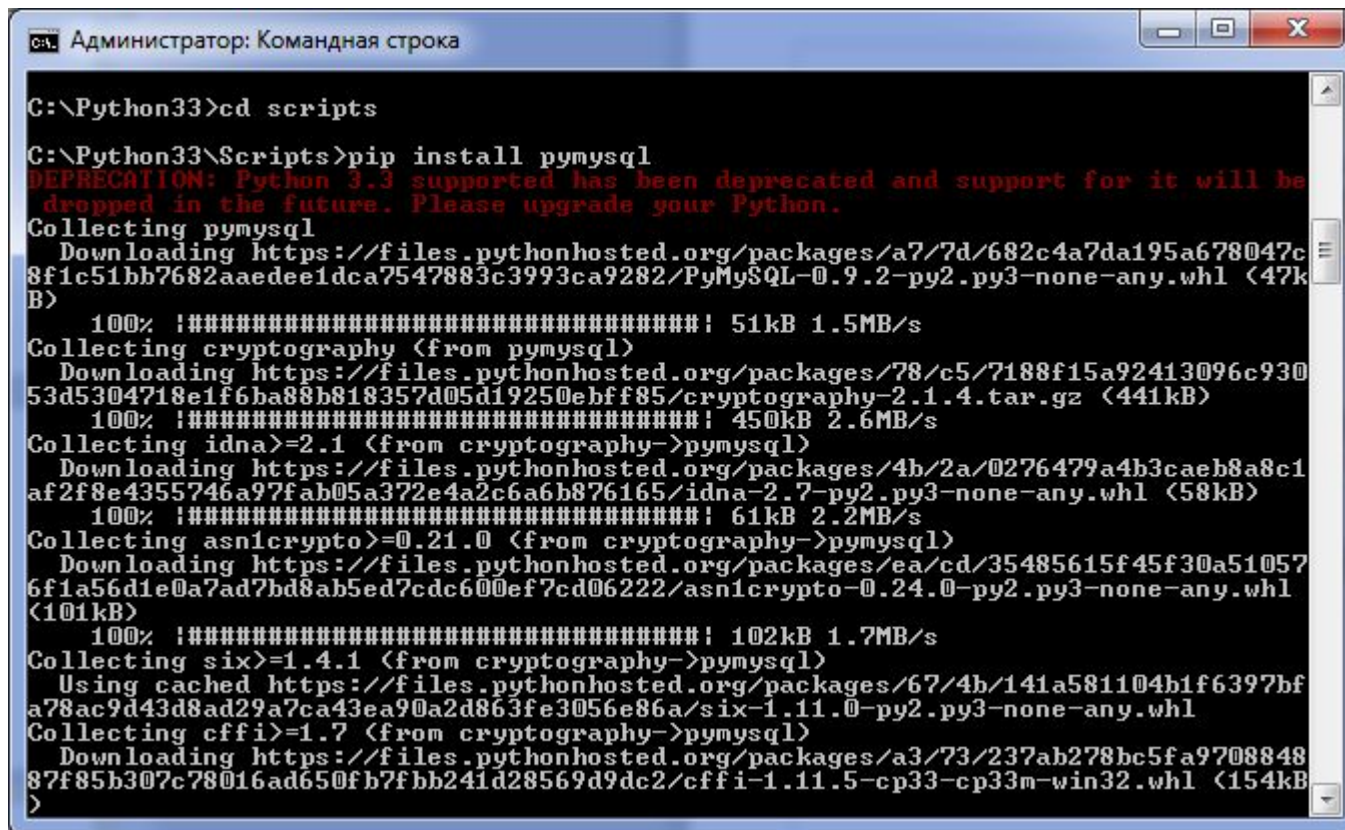
```
ey', 'On pugaet det
```

Result Grid   Filter Rows:

	id	title	content
	2	Akula	Akula-karakula
	3	barmaley	pugaet detey
	4	gorilla	vedet krokodila
	5	aybolit	spasaet detey
	NULL	NULL	NULL

```
mysql> select * from pages where id=2
-> ;
+----+-----+-----+
| id | title | content |
+----+-----+-----+
|  2 | Akula | Akula-karakula |
+----+-----+-----+
1 row in set (0.01 sec)
```

- pip install pymysql



```
Администратор: Командная строка
C:\Python33>cd scripts
C:\Python33\Scripts>pip install pymysql
DEPRECATION: Python 3.3 supported has been deprecated and support for it will be
dropped in the future. Please upgrade your Python.
Collecting pymysql
  Downloading https://files.pythonhosted.org/packages/a7/7d/682c4a7da195a678047c
8f1c51bb7682aaedee1dca7547883c3993ca9282/PyMySQL-0.9.2-py2.py3-none-any.whl (47k
B)
  100% |#####| 51kB 1.5MB/s
Collecting cryptography <from pymysql>
  Downloading https://files.pythonhosted.org/packages/78/c5/7188f15a92413096c930
53d5304718e1f6ba88b818357d05d19250ebff85/cryptography-2.1.4.tar.gz (441kB)
  100% |#####| 450kB 2.6MB/s
Collecting idna>=2.1 <from cryptography->pymysql>
  Downloading https://files.pythonhosted.org/packages/4b/2a/0276479a4b3caeb8a8c1
af2f8e4355746a97fab05a372e4a2c6a6b876165/idna-2.7-py2.py3-none-any.whl (58kB)
  100% |#####| 61kB 2.2MB/s
Collecting asn1crypto>=0.21.0 <from cryptography->pymysql>
  Downloading https://files.pythonhosted.org/packages/ea/cd/35485615f45f30a51057
6f1a56d1e0a7ad7bd8ab5ed7cdc600ef7cd06222/asn1crypto-0.24.0-py2.py3-none-any.whl
(101kB)
  100% |#####| 102kB 1.7MB/s
Collecting six>=1.4.1 <from cryptography->pymysql>
  Using cached https://files.pythonhosted.org/packages/67/4b/141a581104b1f6397bf
a78ac9d43d8ad29a7ca43ea90a2d863fe3056e86a/six-1.11.0-py2.py3-none-any.whl
Collecting cffi>=1.7 <from cryptography->pymysql>
  Downloading https://files.pythonhosted.org/packages/a3/73/237ab278bc5fa9708848
87f85b307c78016ad650fb7fbb241d28569d9dc2/cffi-1.11.5-cp33-cp33m-win32.whl (154kB
)
```



# pip install mysqlclient

```
cmd. Администратор: Командная строка
C:\Python33\Scripts>pip install mysqlclient
DEPRECATION: Python 3.3 supported has been deprecated and support for it will be
dropped in the future. Please upgrade your Python.
Collecting mysqlclient
  Downloading https://files.pythonhosted.org/packages/ec/fd/83329b9d3e14f7344d1c
b31f128e6dbba70c5975c9e57896815dbb1988ad/mysqlclient-1.3.13.tar.gz (90kB)
    100% |#####| 92kB 1.7MB/s
Building wheels for collected packages: mysqlclient
  Running setup.py bdist_wheel for mysqlclient ... error
  Complete output from command c:\python33\python.exe -u -c "import setuptools,
tokenize;__file__='c:\users\836d\1\appdata\local\temp\pip-install-2lp48e\
mysqlclient\setup.py';f=getattr(tokenize, 'open', open)(__file__);code=f.read(<
).replace('\r\n', '\n');f.close();exec(compile(code, __file__, 'exec'))" bdist_wh
eel -d c:\users\836d\1\appdata\local\temp\pip-wheel-j3ggo6 --python-tag cp33:
  running bdist_wheel
  running build
  running build_py
  creating build
  creating build\lib.win32-3.3
  copying _mysql_exceptions.py -> build\lib.win32-3.3
  creating build\lib.win32-3.3\MySQLdb
  copying MySQLdb\__init__.py -> build\lib.win32-3.3\MySQLdb
  copying MySQLdb\compat.py -> build\lib.win32-3.3\MySQLdb
  copying MySQLdb\connections.py -> build\lib.win32-3.3\MySQLdb
  copying MySQLdb\converters.py -> build\lib.win32-3.3\MySQLdb
  copying MySQLdb\cursors.py -> build\lib.win32-3.3\MySQLdb
  copying MySQLdb\release.py -> build\lib.win32-3.3\MySQLdb
  copying MySQLdb\times.py -> build\lib.win32-3.3\MySQLdb
  creating build\lib.win32-3.3\MySQLdb\constants
  copying MySQLdb\constants\__init__.py -> build\lib.win32-3.3\MySQLdb\constants
```

- MySQLdb1 – не совместим пока с 3
- MySQLdb2 - не совместим пока с 3
- moist - будет

# Совместимые с 3

- `mysql-connector-python`
- `pymysql`
- `CyMySQL`
- `mysqlclient`

- PHP MySQL
- Python Django PostgreSQL
- Node.js MongoDB
- SQLite