一、在CentOS上安装PostgreSQL数据库
下面我们就以CentOS系统为例，给大家讲解一下PostgreSQL的安装过程。
1.**使用yum安装postgresql**

[plain]

```
[pengchengxiang@localhost ~]$ sudo yum install postgresql-server.x86_64
Loaded plugins: fastestmirror, refresh-packagekit, security
Setting up Install Process
Loading mirror speeds from cached hostfile
 * base: mirrors.btte.net
 * extras: mirror.bit.edu.cn
 * updates: mirror.bit.edu.cn
Resolving Dependencies
--> Running transaction check
---> Package postgresql-server.x86_64 0:8.4.20-3.el6_6 will be installed
--> Processing Dependency: postgresql(x86-64) = 8.4.20-3.el6_6 for package: postgresql-server-
8.4.20-3.el6_6.x86_64
--> Running transaction check
---> Package postgresql.x86_64 0:8.4.20-3.el6_6 will be installed
--> Finished Dependency Resolution
Dependencies Resolved
================================================================================
 Package                 Arch         Version               Repository     Size
================================================================================
Installing:
 postgresql-server       x86_64       8.4.20-3.el6_6        updates       3.4 M
Installing for dependencies:
 postgresql              x86_64       8.4.20-3.el6_6        updates       2.6 M
Transaction Summary
================================================================================
Install       2 Package(s)
Total download size: 6.0 M
Installed size: 28 M
Is this ok [y/N]: y
Downloading Packages:
(1/2): postgresql-8.4.20-3.el6_6.x86_64.rpm              | 2.6 MB     00:02
(2/2): postgresql-server-8.4.20-3.el6_6.x86_64.rpm       | 3.4 MB     00:06
--------------------------------------------------------------------------------
Total                                          680 kB/s | 6.0 MB     00:09
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
  Installing : postgresql-8.4.20-3.el6_6.x86_64                             1/2
  Installing : postgresql-server-8.4.20-3.el6_6.x86_64                      2/2
  Verifying  : postgresql-8.4.20-3.el6_6.x86_64                             1/2
  Verifying  : postgresql-server-8.4.20-3.el6_6.x86_64                      2/2
Installed:
  postgresql-server.x86_64 0:8.4.20-3.el6_6
Dependency Installed:
  postgresql.x86_64 0:8.4.20-3.el6_6
Complete!
```

2.初始化postgresql数据库

[plain]

```
[pengchengxiang@localhost ~]$ sudo service postgresql initdb
Initializing database: [  OK  ]
```

2.启动postgresql服务

[plain]

```
[pengchengxiang@localhost ~]$ sudo service postgresql start
Starting postgresql service: [  OK  ]
```

3.查看postgresql的服务状态

[plain]

```
[pengchengxiang@localhost ~]$ sudo service postgresql status
postmaster (pid  3496) is running...
```

问题：如果你在没有进行初始化数据库之前就启东postgrepsql服务，则会报错如下：

[plain]

```
[pengchengxiang@localhost ~]$ sudo service postgresql start
/var/lib/pgsql/data is missing. Use "service postgresql initdb" to initialize the cluster first.
[FAILED]
```

二、连接PostgreSQL数据库

如果想连接到数据库，需要切换到postgres用户下，然后使用psql连接到数据库中。在该用户下连接数据库，是不需要密码的。

1.切换的postgres用户，并连接数据库

[plain]

```
[pengchengxiang@localhost ~]$ sudo su - postgres
-bash-4.1$ psql
psql (8.4.20)
Type "help" for help.
postgres=#
```

2.列出所有的数据库

[plain]

```
postgres=# \l
                                  List of databases
   Name    |  Owner   | Encoding |  Collation  |    Ctype    |   Access privileges
-----------+----------+----------+-------------+-------------+-----------------------
 postgres  | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |
 template0 | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
                                                             : postgres=CTc/postgres
 template1 | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
```

```
                                                                    : postgres=CTc/postgres
(3 rows)
```

3.退出数据库

[plain]

```
postgres=# \q
-bash-4.1$
```

三、PostgreSQL数据库目录

默认安装上，PostgreSQL的数据库目录在/var/lib/pgsql/data目录。

[plain]

```
-bash-4.1$ ls -l /var/lib/pgsql/data/
total 80
drwx------. 5 postgres postgres  4096 Nov 16 23:55 base
drwx------. 2 postgres postgres  4096 Nov 16 23:55 global
drwx------. 2 postgres postgres  4096 Nov 16 23:55 pg_clog
-rw-------. 1 postgres postgres  3411 Nov 16 23:55 pg_hba.conf
-rw-------. 1 postgres postgres  1631 Nov 16 23:55 pg_ident.conf
drwx------. 2 postgres postgres  4096 Nov 17 00:00 pg_log
drwx------. 4 postgres postgres  4096 Nov 16 23:55 pg_multixact
drwx------. 2 postgres postgres  4096 Nov 17 00:02 pg_stat_tmp
drwx------. 2 postgres postgres  4096 Nov 16 23:55 pg_subtrans
drwx------. 2 postgres postgres  4096 Nov 16 23:55 pg_tblspc
drwx------. 2 postgres postgres  4096 Nov 16 23:55 pg_twophase
-rw-------. 1 postgres postgres     4 Nov 16 23:55 PG_VERSION
drwx------. 3 postgres postgres  4096 Nov 16 23:55 pg_xlog
-rw-------. 1 postgres postgres 16886 Nov 16 23:55 postgresql.conf
-rw-------. 1 postgres postgres    57 Nov 16 23:55 postmaster.opts
-rw-------. 1 postgres postgres    45 Nov 16 23:55 postmaster.pid
```

四、PostgrepSQL的简单配置

PostgreSQL数据库的配置主要是通过修改数据目录下的postgresql.conf文件来实现的。

1.修改监听的ip和端口

使用postgresql用户连接数据库后，进入到/var/lib/pgsql/data目录下，编辑postgresql.conf文件：

[plain]

```
# - Connection Settings -
#listen_addresses = '*'                 # what IP address(es) to listen on;
                                        # comma-separated list of addresses;
                                        # defaults to 'localhost', '*' = all
                                        # (change requires restart)
#port = 5432                            # (change requires restart)
```

修改这两个参数之后，需要重启之后才能生效

[plain]

```
[pengchengxiang@localhost ~]$ sudo service postgresql restart
Stopping postgresql service: [  OK  ]
```

```
Starting postgresql service: [  OK  ]
```

2.修改数据库log相关的参数
日志收集，一般是打开的

```
[plain]
```

```
# This is used when logging to stderr:
logging_collector = on                  # Enable capturing of stderr and csvlog
                                        # into log files. Required to be on for
                                        # csvlogs.
                                        # (change requires restart)
```

日志目录，一般使用默认值

```
[plain]
```

```
# These are only used if logging_collector is on:
log_directory = 'pg_log'                # directory where log files are written,
                                        # can be absolute or relative to PGDATA
```

只保留一天的日志，进行循环覆盖

```
[plain]
```

```
log_filename = 'postgresql-%a.log'      # log file name pattern,
                                        # can include strftime() escapes
log_truncate_on_rotation = on           # If on, an existing log file of the
                                        # same name as the new log file will be
                                        # truncated rather than appended to.
                                        # But such truncation only occurs on
                                        # time-driven rotation, not on restarts
                                        # or size-driven rotation.  Default is
                                        # off, meaning append to existing files
                                        # in all cases.
log_rotation_age = 1d                   # Automatic rotation of logfiles will
                                        # happen after that time.  0 disables.
log_rotation_size = 0                   # Automatic rotation of logfiles will
```

3.内存参数的配置
共享内存的大小，用于共享数据块。如果你的机器上有足够的内存，可以把这个参数改的大一些，这样数据库就可以缓存更多的数据块，当读取数据时，就可以从共享内存中读，而不需要再从文件上去读取。

```
[plain]
```

```
# - Memory -
shared_buffers = 32MB                   # min 128kB
                                        # (change requires restart)
```

单个SQL执行时，排序、hash json所用的内存，SQL运行完后，内存就释放了。

```
[plain]
```

```
# actively intend to use prepared transactions.
#work_mem = 1MB                         # min 64kB
```