

# **PDP: Design & Development of Institutional Repository Using DSpace**

3<sup>rd</sup> to 5<sup>th</sup> March 2017

## **DSpace Backup & Restore**

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**Backup**

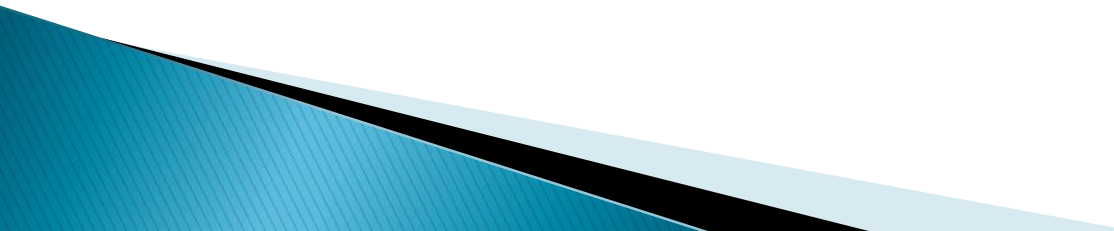
# Why Backup?

It is almost certain that you will be storing valuable information in your Dspace server. Even assuming that the Dspace code is 100% bug free and that you will never delete 8000 records when you run the wrong script, you still need to back up! Drives and fans break. Computers get stolen. Server rooms get flooded. Without proper backups this could be a disaster.

# What to Backup?

- Dspacefiles
- [tomcat]/webapps/dspace(if customized directly)
- e.g.
- /usr/local/tomcat/webapps/dspace
- Contains JSP files and other classes
- [dspace]/
- This contains configurations
- Make sure directory [dspace]/assetstoreincluded
- full text files (pdf, word files etc.)
- PostgreSQLdatabase
- Metadata and other information

Continue..

- It is strongly recommended that you:
  - Regularly backup your Dspace files and PostgreSQL database.
  - Keep multiple sets of backups.
  - Keep a recent backup physically separate from the archive – either in another room or ideally another site.
  - Regularly check that you can actually restore from your backup. It's not uncommon for people to produce a daily backup for years without checking it. When they come to need it, they discover that something has gone wrong and the backup is useless.
- 

# How to take backup?

- Go to some directory where you have sufficient disk space (e.g cd/data)
- `tar -zcvf <nameof-archive-file.gz> <dspace-direcory>`
- `tar -zcvf dspace_tar.gz /dspace`
- Makes tar archive file and compresses
- Can do it from Linux Windows (X Windows)
- Copy the file .tar.gz to safe place like CD-ROM, DVD, tape, another system etc.

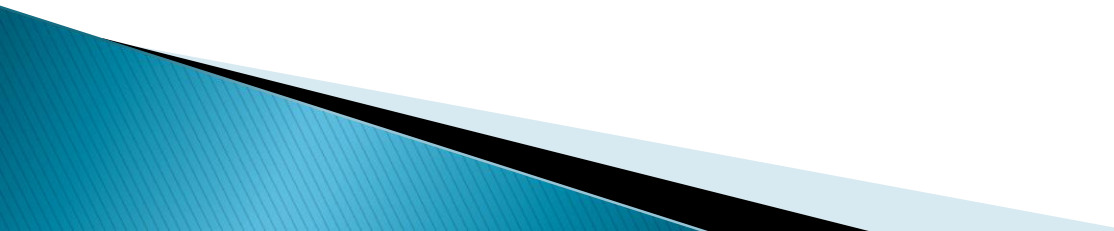
# PostgreSQL database backup

- Go to a directory where sufficient space available
- -Login as dspace Linux user (su-l dspace) if have already logged in as root user
- -**pg\_dump dspace > dspace.backup**
- e.g.
- -Copy the file **dspace.backup** to safe place like
- CD-ROM, DVD, tape, another system etc.

**Restore**



# How to restore DSpace repository when system crashes?

- Install the Linux (FC) OS of same version (works with higher version of OS also)
  - Use the same IP No and host name as previously used
  - Install all the dependent software (JDK ,tomcat, ant, postgresql)
  - Shutdown the tomcat server
  - Start postgresql server (if not running)
- 

# Copy backup files into Linux

Login as root Linux user

- Copy `dspace_tar.gz` (backup file taken earlier) into `/` directory
- Use the command below to uncompress and extract the files
- `tar -zxvf dspace_tar.gz`
- You will see a directory `dspace` has been created

# Create DSpace Linux user and change ownership

- Create dspace user with home directory as /dSPACE
- `adduser -d /dSPACE dSPACE`
- Change the ownership and group of /dSPACE as dSPACE user)
- `ant fresh_install` Login as dSPACE (`su -l dSPACE`) (Linux

pgAdmin III

File Edit Plugins View Tools Help

Object browser

- Server Groups
  - Servers (1)
    - PostgreSQL 9.5 (localhost:5432)

Properties Statistics Dependencies Dependents

Property	Value
Description	PostgreSQL 9.5
Service	
Hostname	localhost
Host Address	
Port	5432
SQL Configuration File	

Connect to Server

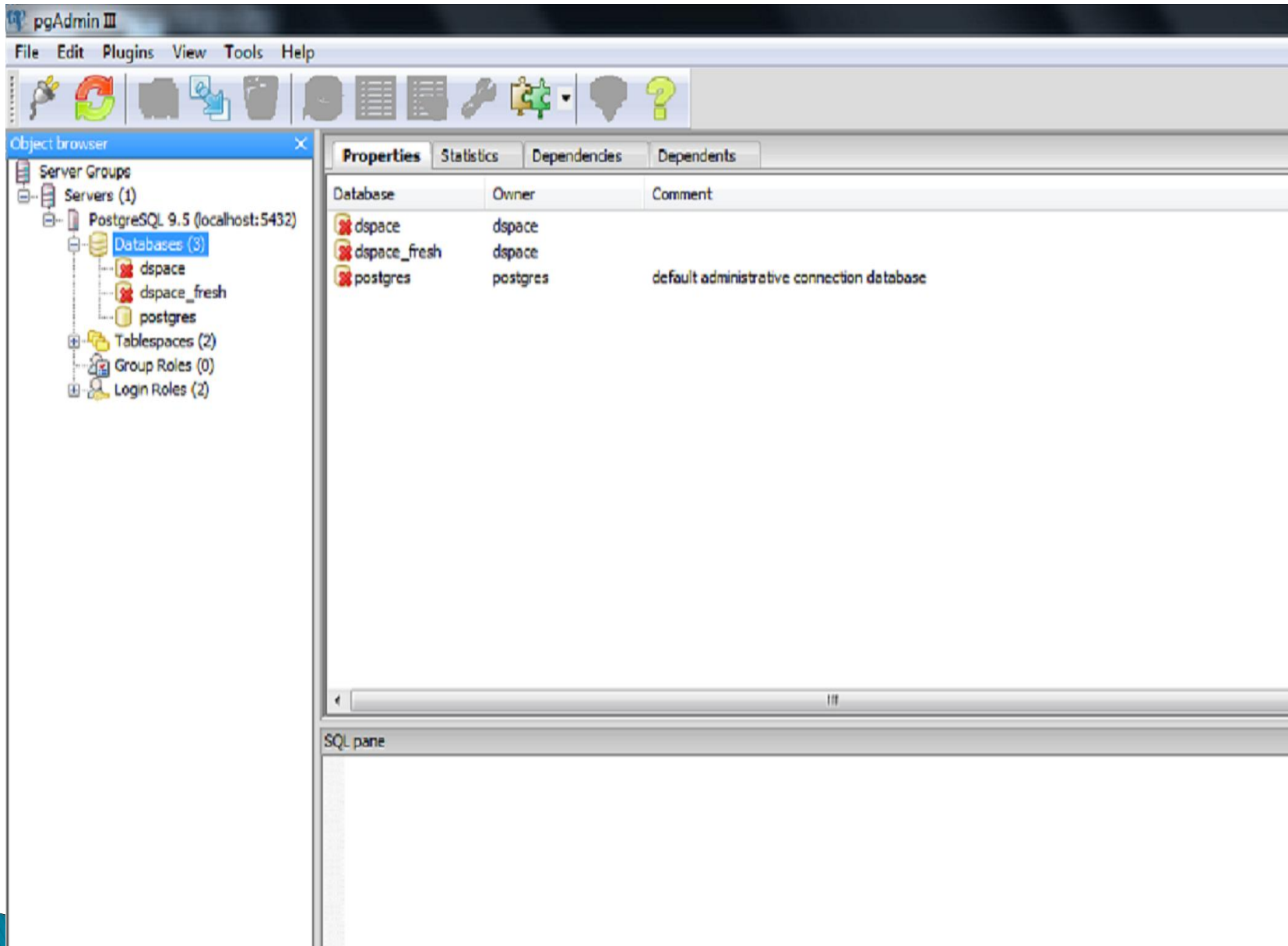
Please enter password for user postgres on server PostgreSQL 9.5 (localhost)

Store password

Help OK Cancel

SQL pane

Retrieving details on server localhost... Done. 0 msec





pgAdmin III

File Edit Plugins View Tools Help

Object browser

- Server Groups
  - Servers (1)
    - PostgreSQL 9.5 (localhost:5432)
      - Databases (3)
        - dspace
        - dspace\_fresh
        - postgres
      - Tablespaces (2)
      - Group Roles (0)
      - Login Roles (2)

Properties

Property	Value
Name	dspace
OID	
Owner	
ACL	
Tablespace	
Default tablespace	
Encoding	
Collation	
Character type	
Default schema	
Default table ACL	
Default sequence ACL	
Default function ACL	
Default type ACL	
Allow connections?	
Connected?	
Connection limit	
System database?	
Comment	

SQL pane

```
-- Database: dspace
-- DROP DATABASE dspace

CREATE DATABASE dspace
WITH OWNER = dspace
ENCODING = 'UTF8'
TABLESPACE =
LC_COLLATE =
LC_CTYPE =
CONNECTION I
```

Backup database "dspace"

Filename: C:\Users\dspace\Desktop\dspacebkp\dspacebackup134.backup

Format: Tar

Compress Ratio: Tar

Encoding: Directory

Number Of Jobs:

Rolename: dspace

File Options: Dump Options #1, Dump Options #2, Objects, Messages

Help Backup Cancel

Retrieving details on database dspace... Done.

dspace on postgres@localhost:5432

78 msec

Object browser

- Server Groups
  - Servers (1)
    - PostgreSQL 9.5 (localhost:5432)
      - Databases (3)
        - dspace
        - dspace\_fresh
        - postgres
      - Tablespaces (2)
      - Group Roles (0)
      - Login Roles (2)

Properties Statistics Dependencies Dependents

Property	Value
Name	dspace
OID	
Owner	
ACL	
Tablespace	
Default tablespace	
Encoding	
Collation	
Character type	
Default schema	
Default table ACL	
Default sequence ACL	
Default function ACL	
Default type ACL	
Allow connections?	
Connected?	
Connection limit	
System database?	
Comment	

SQL pane

```

-- Database: dspace
-- DROP DATABASE dspace;

CREATE DATABASE dspace
  WITH OWNER = postgres
  ENCODING = 'UTF8'
  TABLESPACE = 'postgres'
  LC_COLLATE = 'C'
  LC_CTYPE = 'C'
  CONNECTION LIMIT = -1;
  
```

Backup database "dspace"

Filename: C:\Users\dspace\Desktop\Dspacebkp\dspacebacup134.backup

Format: Tar

Compress Ratio:

Encoding: UTF8

Number Of Jobs:

Role name:

- ISO\_8859\_5
- ISO\_8859\_6
- ISO\_8859\_7
- ISO\_8859\_8
- KOI8R
- KOI8U
- LATIN1
- LATIN10
- LATIN2
- LATIN3
- LATIN4
- LATIN5
- LATIN6
- LATIN7
- LATIN8
- LATIN9
- MULE\_INTERNAL
- SQL\_ASCII
- UTF8**
- WIN1250
- WIN1251
- WIN1252
- WIN1253
- WIN1254
- WIN1255
- WIN1256
- WIN1257
- WIN1258
- WIN866
- WIN874

File Options: Dump

Help



pgAdmin III

File Edit Plugins View Tools Help

Object browser

- Server Groups
  - Servers (1)
    - PostgreSQL 9.5 (localhost:5432)
      - Databases (3)
        - dspace
        - dspace\_fresh
        - postgres
      - Tablespaces (2)
      - Group Roles (0)
      - Login Roles (2)

Properties Statistics Dependencies Dependents

Property	Value
Name	dspace
OID	
Owner	
ACL	
Tablespace	
Default tablespace	
Encoding	
Collation	
Character type	
Default schema	
Default table ACL	
Default sequence ACL	
Default function ACL	
Default type ACL	
Allow connections?	
Connected?	
Connection limit	
System database?	

SQL pane

```
-- Database: dspace
-- DROP DATABASE dspace

CREATE DATABASE dspace
WITH OWNER = dspace
ENCODING = 'UTF8'
TABLESPACE =
LC_COLLATE = 'C'
LC_CTYPE = 'C'
CONNECTION LIMIT = -1
```

Backup database "dspace"

Filename: C:\Users\dspace\Desktop\Dspacebkp\dspacebackup134.backup

Format: Tar

Compress Ratio:

Encoding: UTF8

Number Of Jobs:

Role name: dspace

File Options: Dump Options #1 Dump Options #2 Objects Messages

Help Backup Cancel

Retrieving details on database dspace... Done.

dspace on postgres@localhost:5432 78 msec

pgAdmin III

File Edit Plugins View Tools Help

Object browser

- Server Groups
  - Servers (1)
    - PostgreSQL 9.5 (localhost:5432)
      - Databases (3)
        - dspace
        - dspace\_fresh
        - postgres
      - Tablespaces (2)
      - Group Roles (0)
      - Login Roles (2)

Properties Statistics Dependencies Dependents

Property	Value
Name	dspace
OID	
Owner	
ACL	
Tablespace	
Default tablespace	
Encoding	
Collation	
Character type	
Default schema	
Default table ACL	
Default sequence ACL	
Default function ACL	
Default type ACL	
Allow connections?	
Connected?	
Connection limit	
System database?	
Comment	

SQL pane

```

-- Database: dspace
-- DROP DATABASE dspace
CREATE DATABASE dspace
WITH OWNER = dspace
ENCODING =
TABLESPACE =
LC_COLLATE =
LC_CTYPE =
CONNECTION
  
```

Backup database "dspace"

```

pg_dump: dumping contents of table "public.community2collection"
pg_dump: dumping contents of table "public.community2community"
pg_dump: dumping contents of table "public.community_item_count"
pg_dump: dumping contents of table "public.doi"
pg_dump: dumping contents of table "public.eperson"
pg_dump: dumping contents of table "public.epersongroup"
pg_dump: dumping contents of table "public.epersongroup2eperson"
pg_dump: dumping contents of table "public.epersongroup2workspaceitem"
pg_dump: dumping contents of table "public.fileextension"
pg_dump: dumping contents of table "public.group2group"
pg_dump: dumping contents of table "public.group2groupcache"
pg_dump: dumping contents of table "public.handle"
pg_dump: dumping contents of table "public.harvested_collection"
pg_dump: dumping contents of table "public.harvested_item"
pg_dump: dumping contents of table "public.item"
pg_dump: dumping contents of table "public.item2bundle"
pg_dump: dumping contents of table "public.metadatafieldregistry"
pg_dump: dumping contents of table "public.metadataschemaregistry"
pg_dump: dumping contents of table "public.metadatavalue"
pg_dump: dumping contents of table "public.most_recent_checksum"
pg_dump: dumping contents of table "public.registrationdata"
pg_dump: dumping contents of table "public.requestitem"
pg_dump: dumping contents of table "public.resourcepolicy"
pg_dump: dumping contents of table "public.schema_version"
pg_dump: dumping contents of table "public.subscription"
pg_dump: dumping contents of table "public.taskisitem"
pg_dump: dumping contents of table "public.versionhistory"
pg_dump: dumping contents of table "public.versionitem"
pg_dump: dumping contents of table "public.webapp"
pg_dump: dumping contents of table "public.workflowitem"
pg_dump: dumping contents of table "public.workspaceitem"
  
```

Process returned exit code 0.

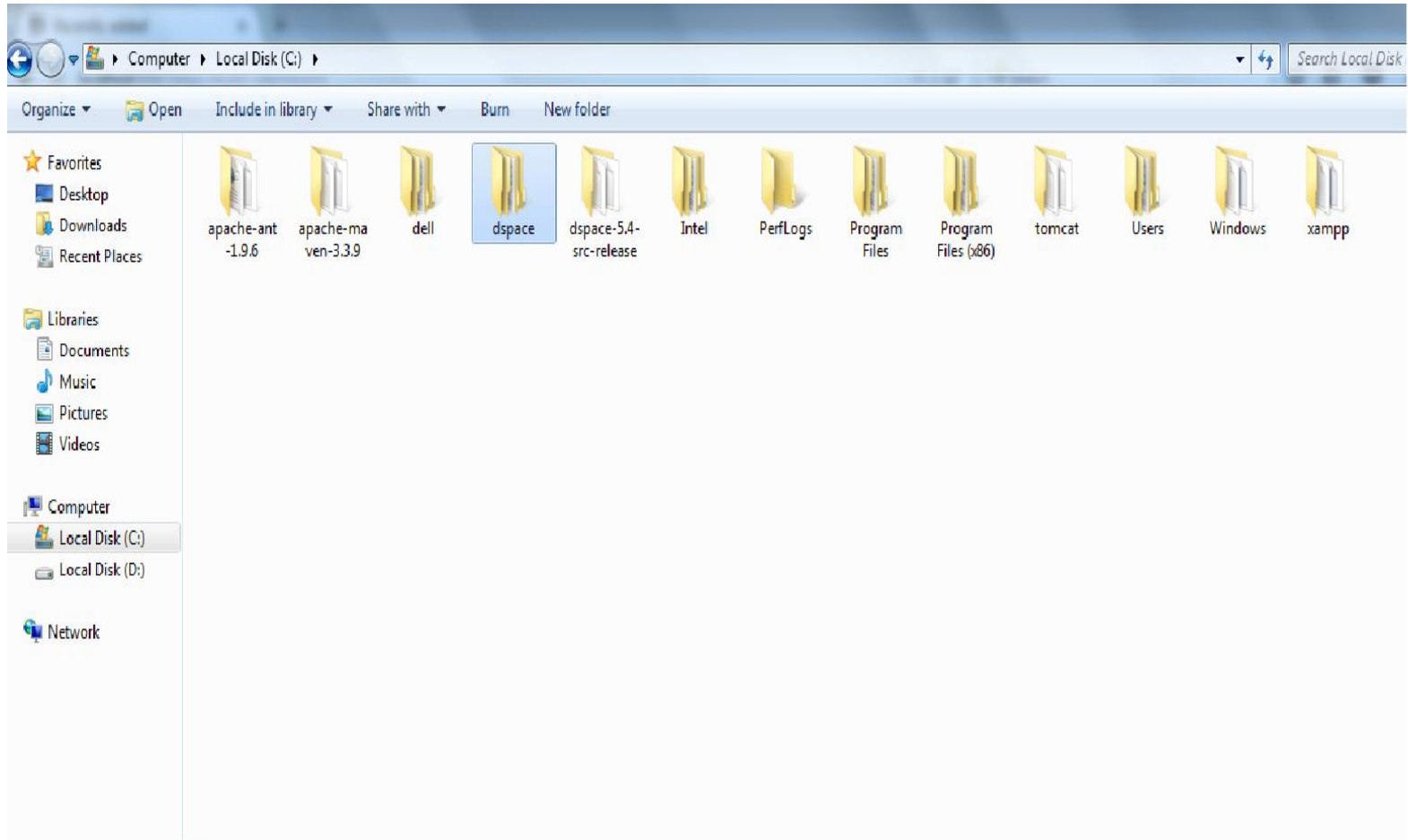
File Options Dump Options #1 Dump Options #2 Objects Messages

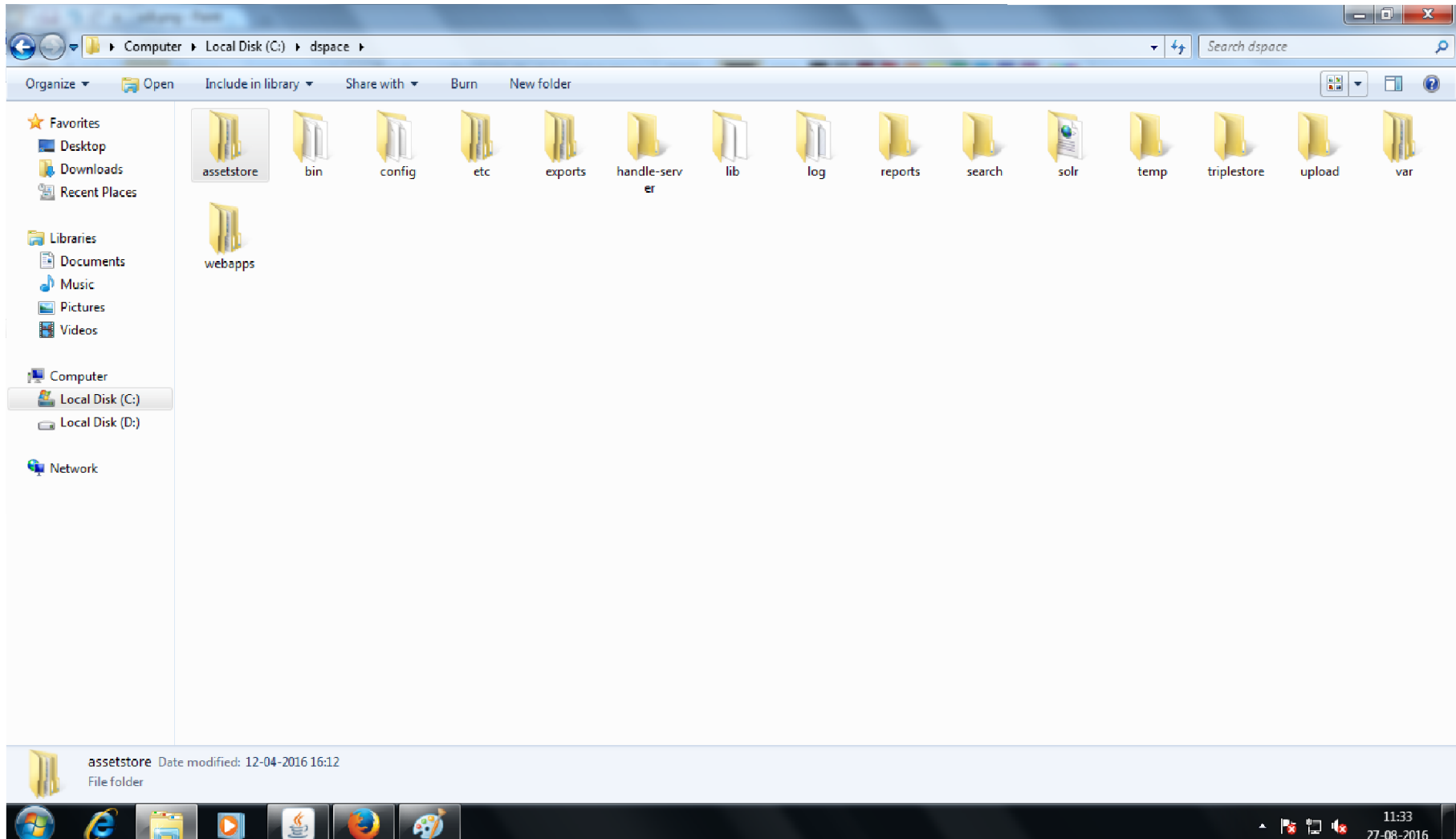
Help Done Cancel

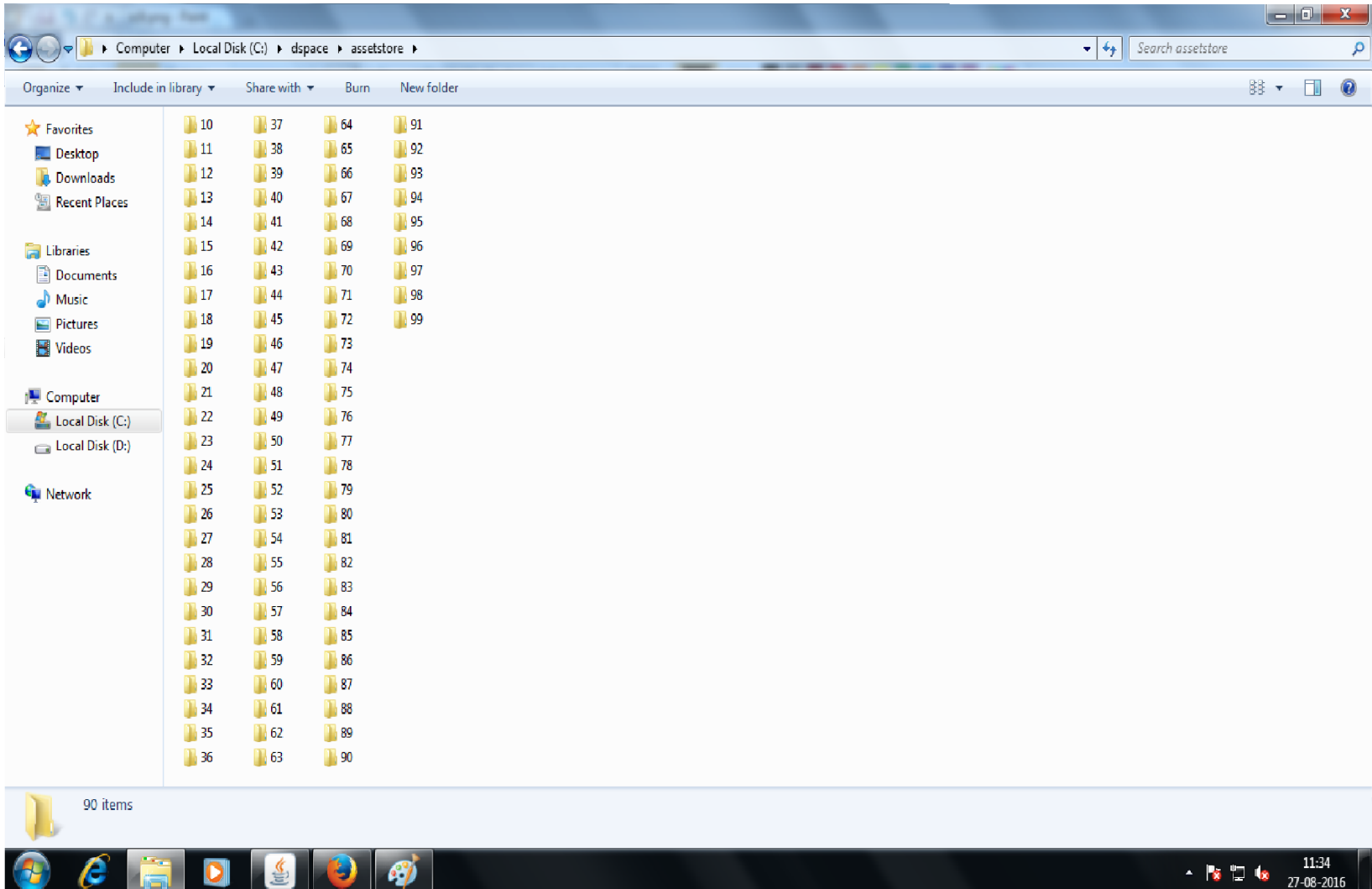
Retrieving details on database dspace... Done.

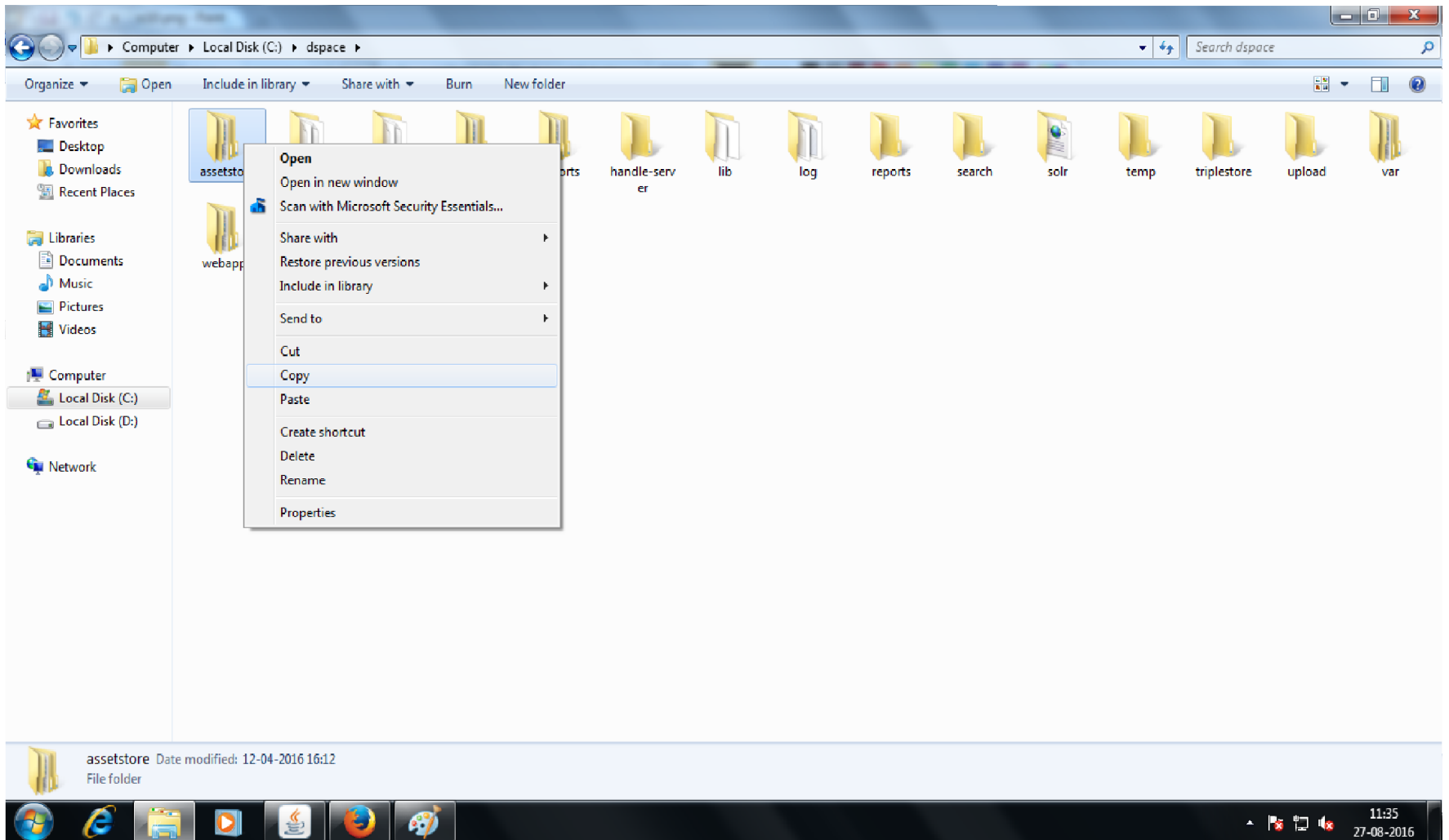
dspace on postgres@localhost:5432

78 msec









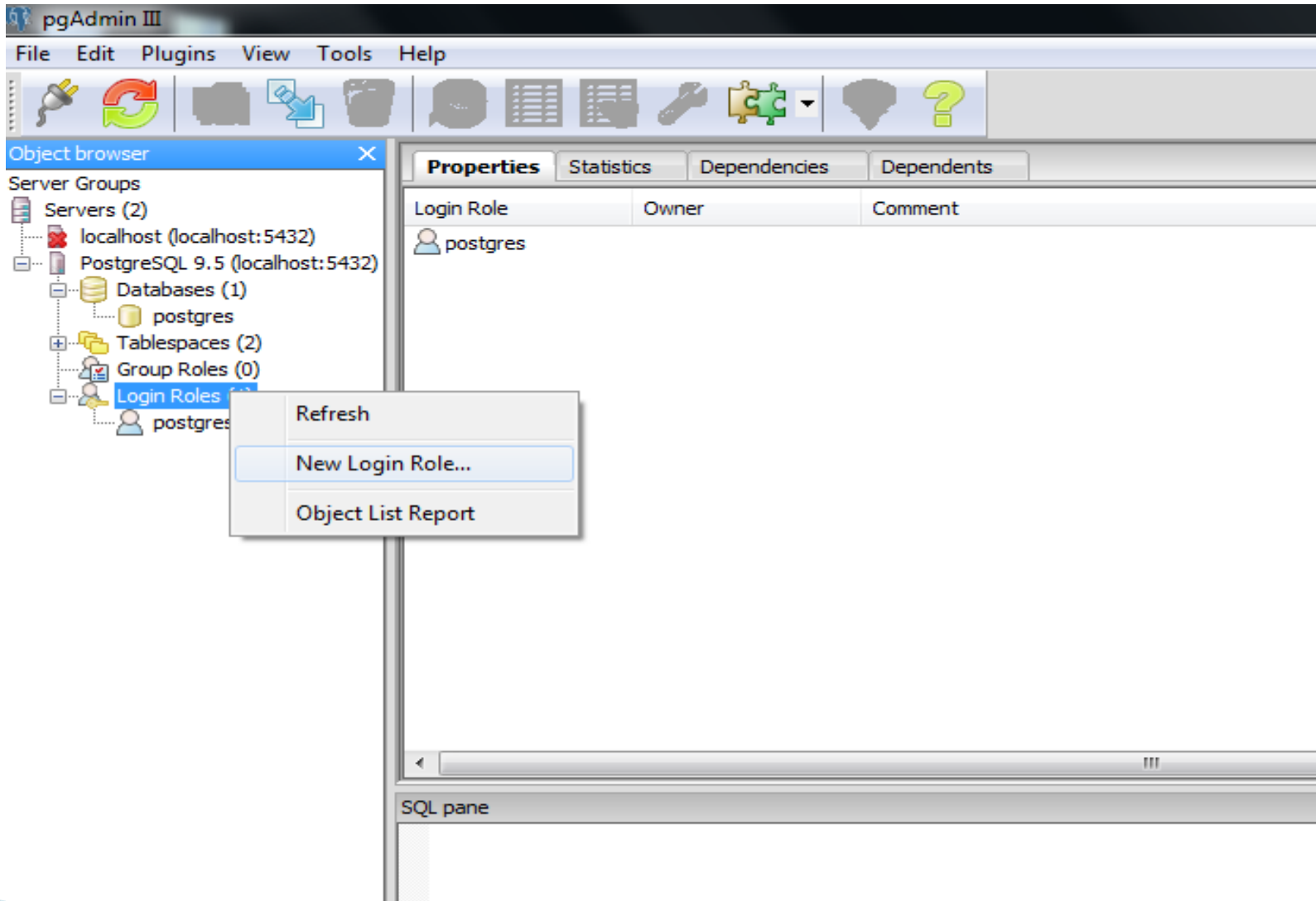
# Restore DSpace database from backup

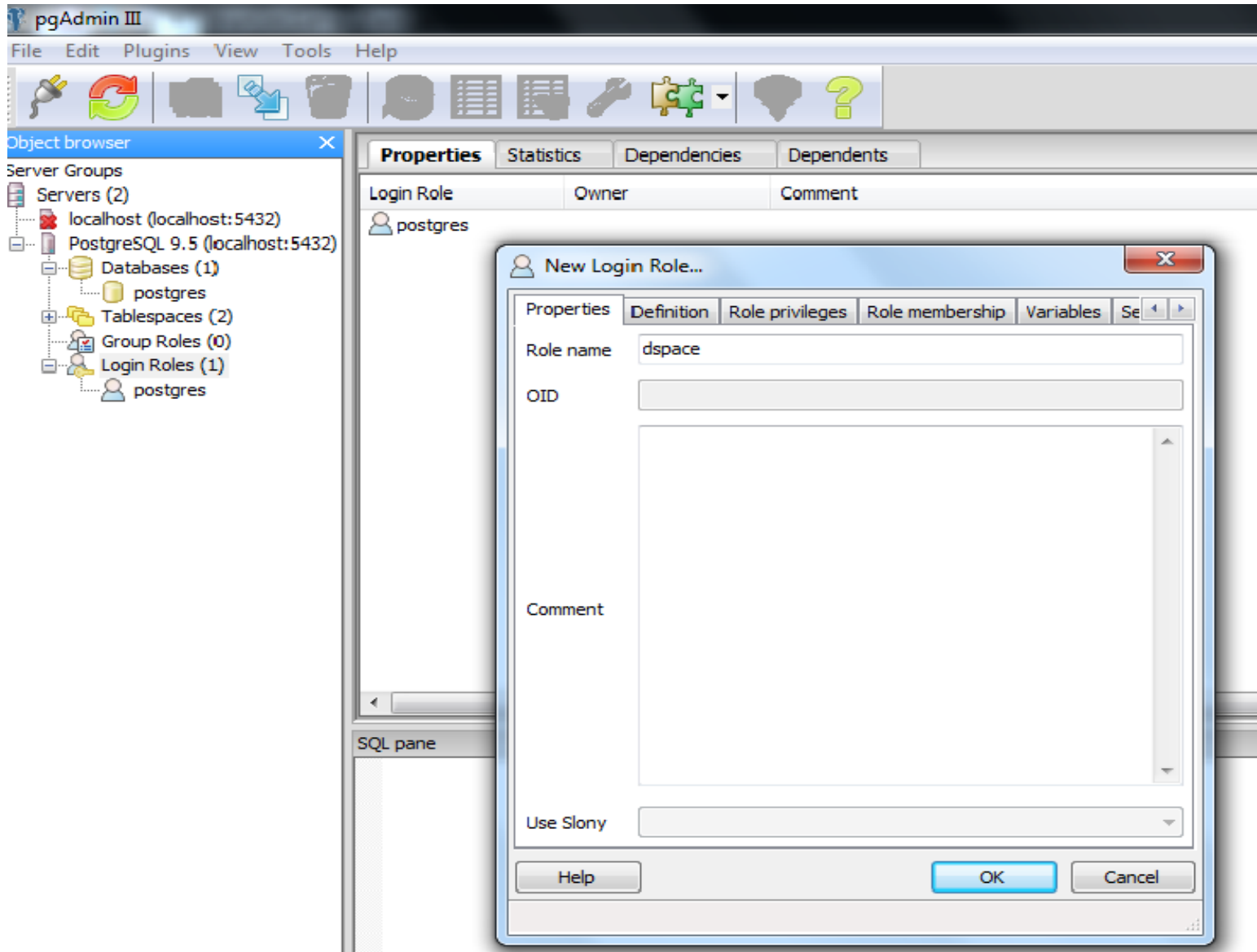
- Drop and recreate dspace postgresql database using the command
  - **dropdb dspace**
  - **createdb -U dspace -E UNICODE dspace**
- Restore dspace database from backup
- Login as postgres (su -l postgres )Linux user **psql-f dspace.backup dspace**

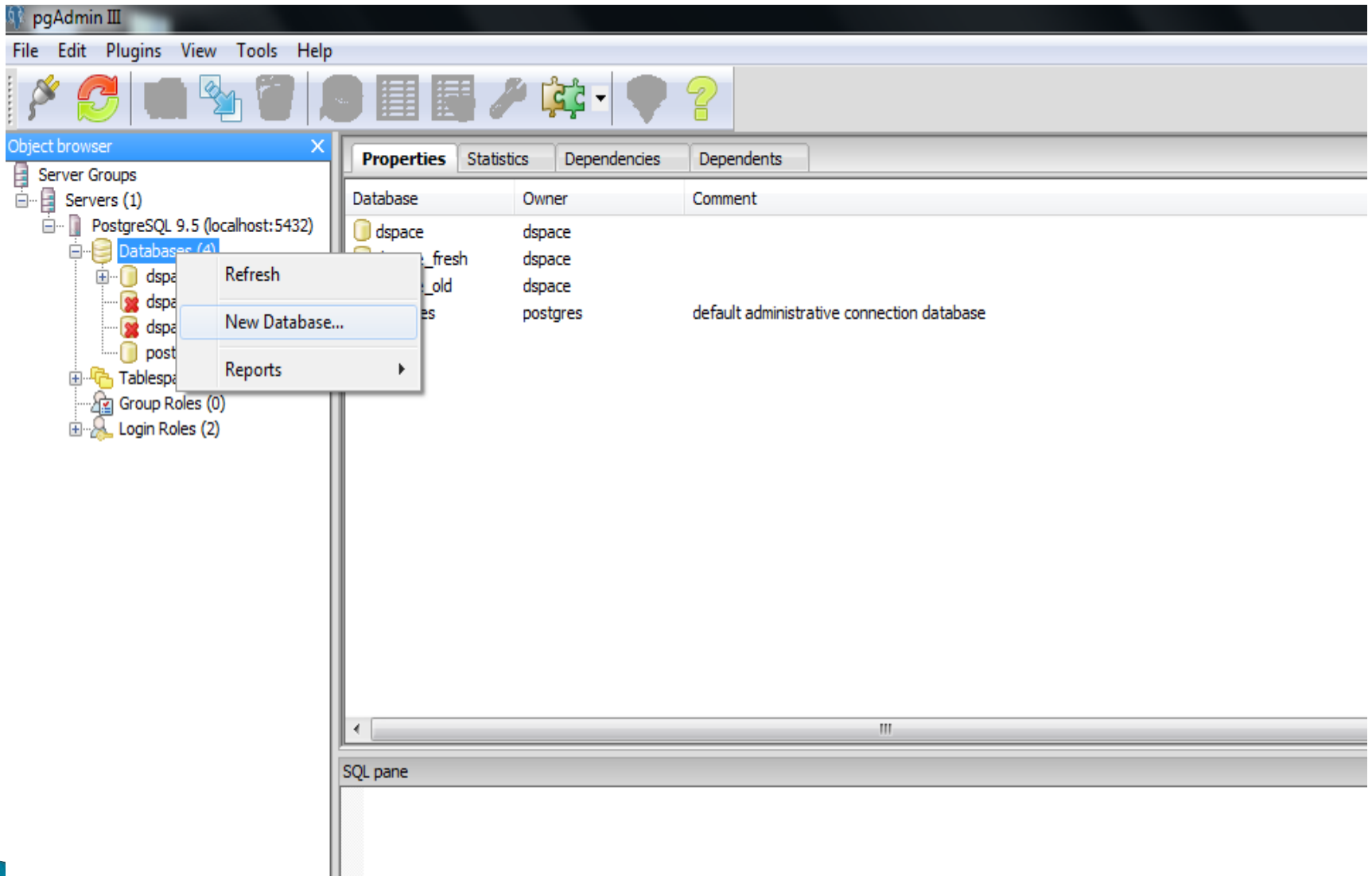
# Copy web application files to tomcat directory

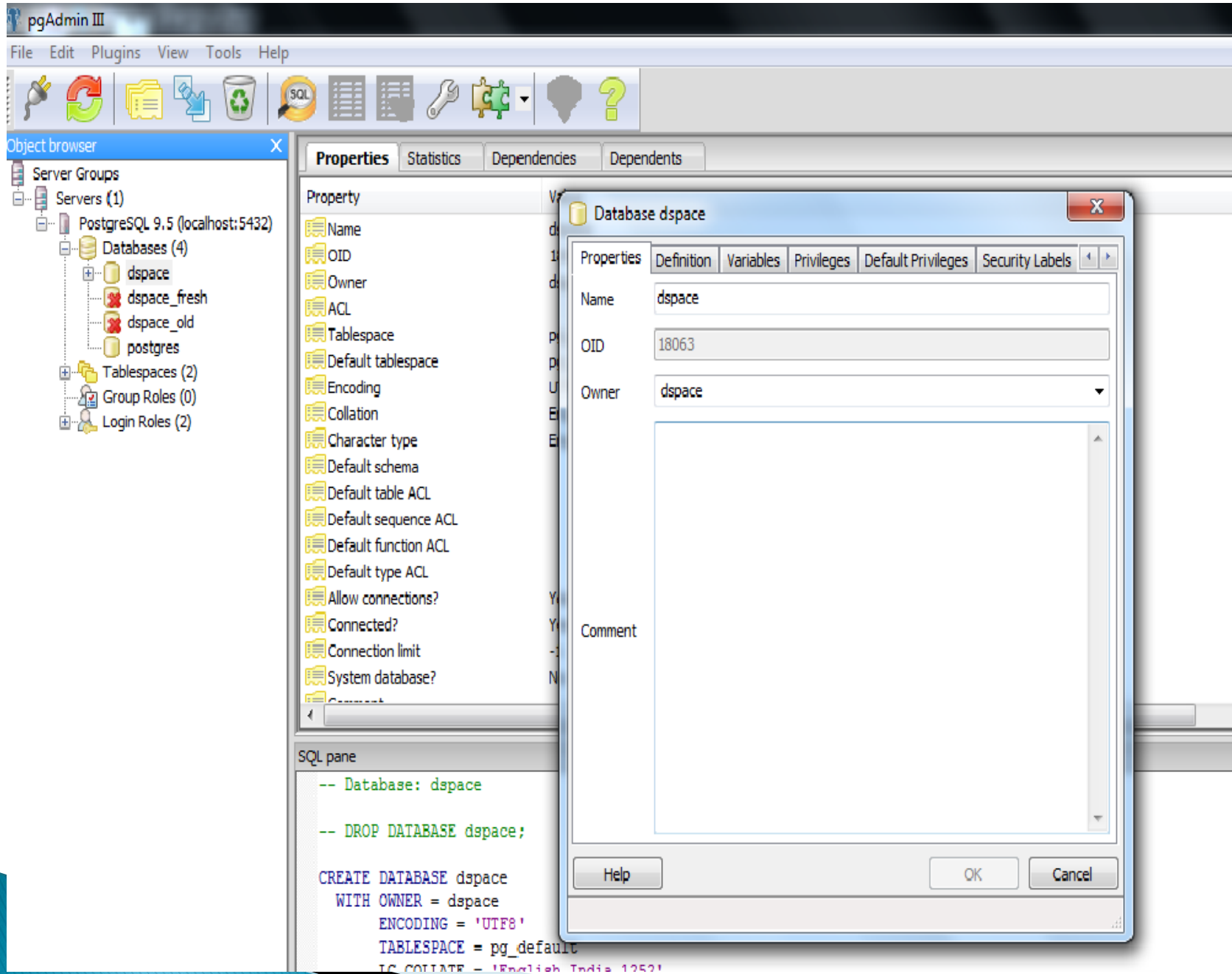
- Login as dspace (Linux user)
- Copy webapps folder again to your tomcat's webapps

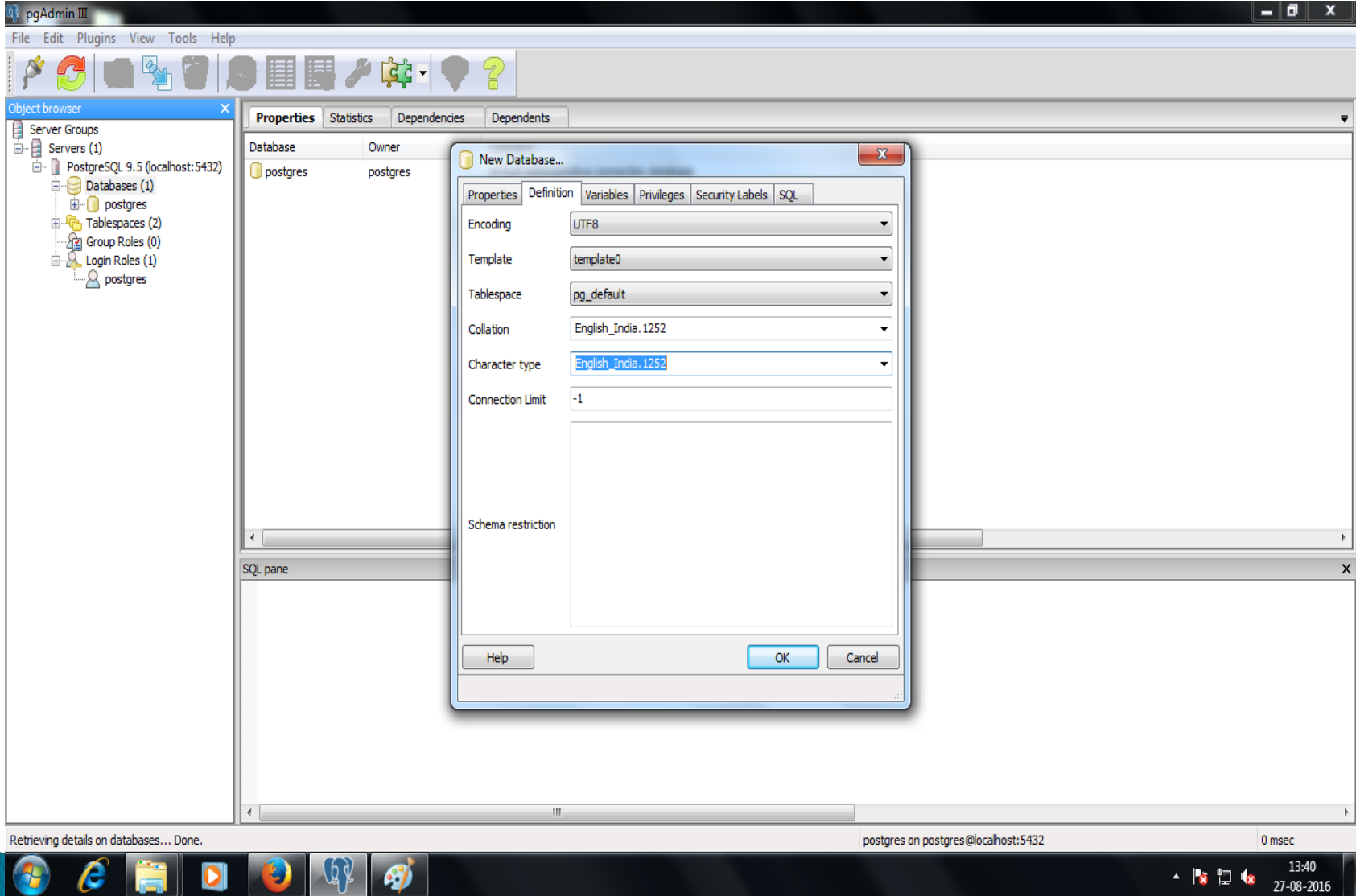













pgAdmin III

File Edit Plugins View Tools Help



Object browser

- Server Groups
  - Servers (1)
    - PostgreSQL 9.5 (localhost:5432)
      - Databases (4)
        - dspace
        - dspa
        - dspa
        - postg
      - Tablespa
      - Group Ro
      - Login Rol

Properties

Property	Value	
Name	dspace	
OID	18063	
	dspace	
	pg_default	
	pg_default	
	UTF8	
	English_India.1252	
	English_India.1252	
	ma	
	ACL	
	ence ACL	
	tion ACL	
	ACL	
	itions?	Yes
		Yes
	mit	-1
	base?	No

Refresh

New Object

Disconnect database

Delete/Drop...

Search objects...

CREATE Script

Reports

Maintenance...

Backup...

Restore...

Properties...

SQL pane

```
-- Database: dspace
-- DROP DATABASE dspace;

CREATE DATABASE dspace
WITH OWNER = dspace
ENCODING = 'UTF8'
TABLESPACE = pg_default
```

The screenshot shows the pgAdmin III interface with the following components:

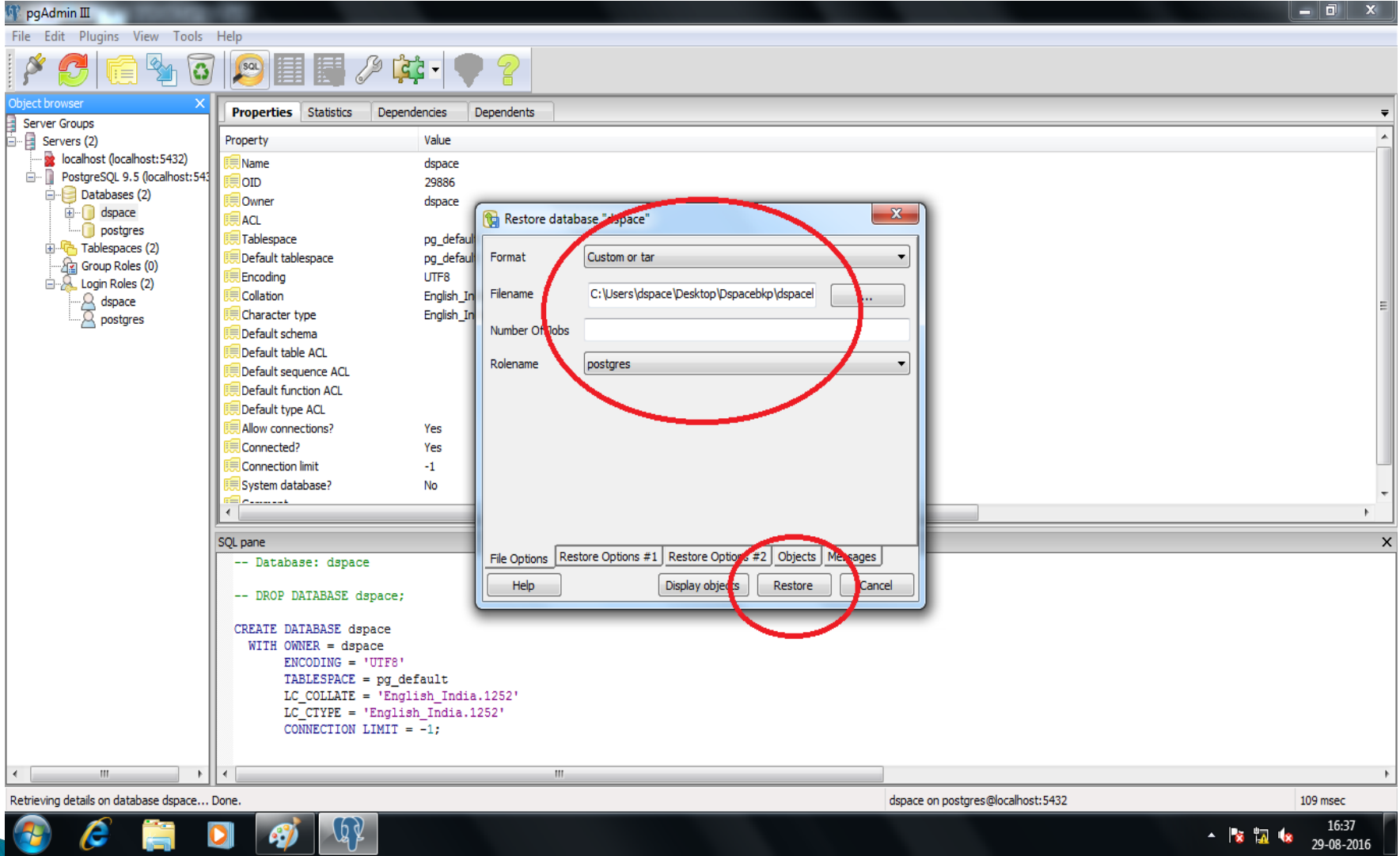
- Object browser:** Shows a PostgreSQL 9.5 server with databases 'dspace', 'dspace\_fresh', 'dspace\_old', and 'postgres'.
- Properties window:** Displays details for the 'dspace' database, including Name, OID, Owner, Tablespace, and Encoding.
- Restore dialog:** Titled 'Restore database "dspace"', showing the 'Format' set to 'Custom or tar' and the 'Filename' as 'C:\Users\dspace\Desktop\Dspacebkp\dspacel'.
- Select backup filename dialog:** Shows a file explorer view of the 'Dspacebkp' folder with two backup files. The file type is set to 'Backup files (\*.backup)'.
- SQL pane:** Contains the following SQL commands:

```
-- Database: dspace
-- DROP DATABASE dspace;

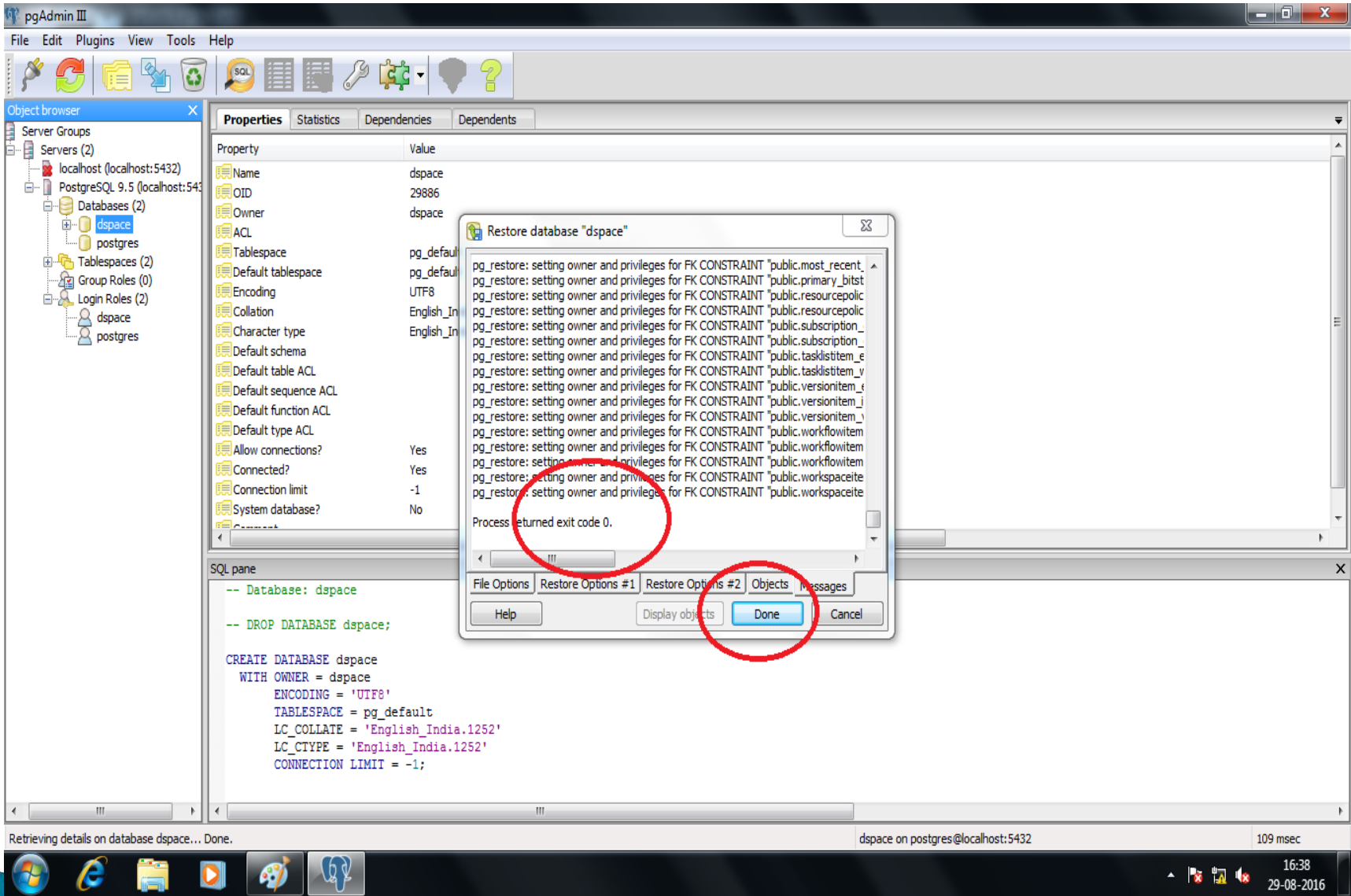
CREATE DATABASE dspace
WITH OWNER = dspace
ENCODING = 'UTF8'
TABLESPACE = pg_default
LC_COLLATE = 'English_India.1252'
LC_CTYPE = 'English_India.1252'
CONNECTION LIMIT = -1;
```

Retrieving details on database dspace... Done.









After Start Tomcat and

Dspace Reindexing Run Command

```
dspace@localhost /]$ /dspace/bin/dspace index-discovery -f
```

Thank you

Questions Always Welcome

