

## **Wikiprint Book**

**Title: ESGF Local Node Deployment Tutorial**

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## ESGF Local Node Deployment Tutorial

This page shows how to deploy an ESGF Node that provides data, index and idp services and belongs to the esgf-test federation. The purpose of this node is to test the process of publication in the ESGF.

This page assumes that command are executed by the root user (not sudo).

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### 1. Previous installation clean up

Execute `/usr/local/bin/esg-node stop` in order to stop the current ESGF services (in case they are running).

```
[root@spock ~]# /usr/local/bin/esg-node stop
```

```
EEEEEEEEEEEEEEEEEEEE SSSSSSSSSSSSSS          GGGGGGGGGGGGGGFFFFFFFFFFFFFFFFFFFFF
E::::::::::::::::::::E SS::::::::::::S          GGG::::::::::::GF:::::::::::::F
E::::::::::::::::::::ES::::::::SSSSSS:         GG:::::::::::::GF:::::::::::::F
EE::::::::EEEEEEEEEE:ES::::S          SSSSSSS  G::::GGGGGGGG:::GFF:::::FFFFFFF:::F
E::::E          EEEEEES::::S          G::::G          GGGGGG  F::::F          FFFFFF
E::::E          S::::S          G::::G          F::::F
E::::EEEEEEEEEE  S::::SSS          G::::G          F:::::FFFFFFF
E:::::E          SS::::SSSS          G::::G          GGGGGGGGGG  F:::::FFFFFFF
E:::::E          SSS::::SS          G::::G          G::::G          F:::::FFFFFFF
E:::::EEEEEEEEEE          SSSSS::S  G::::G          GGGGG:::G  F:::::FFFFFFF
E::::E          S::::SG::::G          G::::G  F::::F
E::::E          EEEEE          S::::S  G::::G          G::::G  F::::F
EE:::::EEEEEEEE:ESSSSSS          S::::S  G::::GGGGGGG:::GFF:::::FF
E:::::ES::::SSSSS::::S          GG:::::::::::::GF:::::::::FF
E:::::ES:::::SS          GGG::::GGG::GF:::::FF
EEEEEEEEEEEEEEEEEEEE SSSSSSSSSSSSSS          GGGGGG  GGGGFFFFFFFFFFFF.1lnl.gov
```

```
Checking that you have root privs on spock.meteo.unican.es... [OK]
```

```
Checking requisites...
```

```
Using IP: 193.144.184.40
```

```
Stopping search services...
```

```
Using solr_workdir=/usr/local/src/esgf/workbench/esg/solr-5.5.3
```

```
Using solr_install_dir=/usr/local/solr-home/slave-8983
```

```
Using solr_data_dir=/esg/solr-index/slave-8983
```

```
Using solr_server_dir=/usr/local/solr
```

```
Using solr_logs_dir=/esg/solr-logs
```

```
Using esg_dist_url=http://esg-dn2.nsc.liu.se/esgf/dist
```

```
sudo: source: command not found
```

```
Sending stop command to Solr running on port 8983 ... waiting 5 seconds to allow Jetty process 16339 to stop gracefully.
```

```
Sending stop command to Solr running on port 8984 ... waiting 5 seconds to allow Jetty process 16554 to stop gracefully.
```

```
Stopping Globus Services for Data-Node... (GridFTP) stop_globus_services for datanode
```

```
globus-gridftp-server: unrecognized service
```

```
Stopping Globus Services for Index-Node... (MyProxy server) stop_globus_services for gateway
```

```
Stopping myproxy-server: [ OK ]
```

```
No MyProxy Process Currently Running...
```

```
Tomcat (jsvc) process is running...
```

```

stop tomcat: /usr/local/tomcat/bin/jsvc -pidfile /var/run/tomcat-jsvc.pid -stop org.apache.catalina.startup.Bootstrap
(please wait)
postmaster (pid 16024) is running...
Stopping postgresql service:          [ OK ]
Stopping httpd:                       [ OK ]
Running shutdown hooks...

-----

Running Node Services...
node type: [ data index idp compute ] (60)
-----
-----

```

Execute `source /usr/local/bin/esg-purge.sh && esg-purge all`

## 2. Installation from scratch

Change directory to `/usr/local/bin/`

```
[root@spock ~]# cd /usr/local/bin/
```

```

[root@spock bin]# wget -O esg-bootstrap http://distrib-coffee.ipsl.jussieu.fr/pub/esgf/dist/devel/esgf-installer/2.4/esg-b
[root@spock bin]# chmod 555 ./esg-bootstrap
[root@spock bin]# ./esg-bootstrap

```

Your directory should look like this:

```

[root@spock bin]# ls
esg-bootstrap  esg-functions  esg-init  esg-node  esg-purge.sh  jar_security_scan  setup-autoinstall

```

Check your node's version:

```

[root@spock bin]# ./esg-node --version
Version: v2.4.24-master-release
Release: Bifrost
Earth Systems Grid Federation (http://esgf.llnl.gov)
ESGF Node Installation Script

```

Set node's type:

```

[root@spock bin]# ./esg-node --set-type idp data index
node type set to: [ index data idp ] (28)

```

Install the node:

```
[root@spock bin]# ./esg-node --install
```

Please select the ESGF distribution mirror for this installation (fastest to slowest):

```

-----
[1] http://dist.ceda.ac.uk/esgf
[2] http://esg-dn2.nsc.liu.se/esgf
[3] http://aims1.llnl.gov/esgf
[4] http://distrib-coffee.ipsl.jussieu.fr/pub/esgf
-----

```

```
select [1] > 1
```

```

Are you ready to begin the installation? [Y/n]
Configured host IP address does not match available IPs...
Detected multiple IP addresses bound to this host...
Please select the IP address to use for this installation
-----
[0] : 193.xxx.xxx.xxx
[1] : 192.xxx.xxx.xxx
-----
select [] > (select the one that fits your case)

```

```

Welcome to the ESGF Node installation program! :-)

What is the fully qualified domain name of this node? [spock.meteo.unican.es]:
What is the admin password to use for this installation? (alpha-numeric only) []:
Please re-enter password:
What is the name of your organization? [unican]:
Please give this node a "short" name: []: unican
Please give this node a more descriptive "long" name []: unican
What is the namespace to use for this node? (set to your reverse fqdn - Ex: "gov.llnl") [es.unican.meteo]:
What peer group(s) will this node participate in? (esgf-test|esgf-prod) [esgf-test]:
What is the default peer to this node? [spock.meteo.unican.es]:
What is the hostname of the node do you plan to publish to? [spock.meteo.unican.es]:
What email address should notifications be sent as? []:
Is the database external to this node? [y/N]:
Please enter the database connection string...
(form: postgresql://[username]@[host]:[port]/esgct)
What is the database connection string? [postgresql://dbsuper@localhost:5432/esgct]: postgresql://
entered: postgresql://dbsuper@localhost:5432/esgct
What is the (low priv) db account for publisher? [esgct]:
What is the db password for publisher user (esgct)? []:

```

```

Enter password for postgres user dbsuper:
Re-enter password for postgres user dbsuper:
Please Enter PostgreSQL port number [5432]:>

```

```

Would you like a "system" or "user" publisher configuration:
-----
*[1] : System
[2] : User
-----
[C] : (Custom)
-----
select [1] >

You have selected: 1
Publisher configuration file -> [/esg/config/esgct/esg.ini]

Is this correct? [Y/n]
Your publisher configuration file will be: /esg/config/esgct/esg.ini
What is your organization's id? [unican]:

```

```

Would you like to use the DN: (OU=ESGF.ORG, O=ESGF) ? [Y/n]:
...
Please enter the password for this keystore :

```

```

Enter a single ip address which would be cleared to access admin restricted pages.
You will be prompted if you want to enter more ip-addresses

Do you wish to allow further ips? y/n

```

```
n
```

```
Create user credentials
```

```
Please enter username for tomcat [dnode_user]:
```

```
Please enter password for user, "dnode_user" [*****]:
```

```
Would you like to add another user? [y/N]:
```

```
Please Enter the public (i.e. routable) IP address of this host [193.xxx.xxx.xxx]:>
```

```
Do you wish to use an external IDP peer?(N/y):
```

```
Do you want to continue with the Globus installation and setup? [Y/n] :
```

```
Do you want to register the MyProxy server with Globus? [Y/n]:
```

```
Please provide a Globus username []: YOUR-GLOBUS-USER
```

```
Globus password []:
```

When finished, you should see something like this:

```
Running Node Services...
```

```
node type: [ data index idp ] (29)
```

```
-----
myproxy-s 23071    root    5u    IPv4 1526752      0t0  TCP *:7512 (LISTEN)
java      26088    solr   28u    IPv6 1591850      0t0  TCP 127.0.0.1:7983 (LISTEN)
java      26088    solr   92u    IPv6 1591986      0t0  TCP *:8983 (LISTEN)
java      26257    solr   28u    IPv6 1592730      0t0  TCP 127.0.0.1:7984 (LISTEN)
java      26257    solr   92u    IPv6 1593098      0t0  TCP *:8984 (LISTEN)
postmaste 29509    postgres 3u    IPv6 1449862      0t0  TCP [::1]:5432 (LISTEN)
postmaste 29509    postgres 4u    IPv4 1449863      0t0  TCP 127.0.0.1:5432 (LISTEN)
httpd     12706    root    4u    IPv6 1512235      0t0  TCP *:80 (LISTEN)
-----
```

```
Finished!...
```

```
In order to see if this node has been installed properly you may direct your browser to:
```

```
http://spock.meteo.unican.es/thredds
```

```
http://spock.meteo.unican.es/esg-orp
```

```
http://spock.meteo.unican.es/
```

```
Your peer group membership -- : [esgf-test]
```

```
Your specified "default" peer : [spock.meteo.unican.es]
```

```
Your specified "index" peer - : [spock.meteo.unican.es] (url = http://spock.meteo.unican.es/)
```

```
Your specified "idp" peer --- : [spock.meteo.unican.es] (name = SPOCK.METEO.UNICAN.ES)
```

```
Your temporary certificates have been placed in /etc/tempcerts
```

```
You can install them by executing this : esg-node --install-keypair /etc/tempcerts/hostcert.pem /etc/tempcerts/hostkey.pem
```

```
When prompted for the chainfile, specify: /etc/tempcerts/cacert.pem
```

```
[Note: Use UNIX group permissions on /esg/content/thredds/esgcat to enable users to be able to publish thredds catalogs from
```

```
%> chgrp -R <appropriate unix group for publishing users> /esg/content/thredds
```

```
-----
Administrators of this node should subscribe to the
esgf-node-admins@lists.llnl.gov by sending email to: majordomo@lists.llnl.gov
with the body: subscribe esgf-node-admins
-----
```

```
v2.4.24-master-release
```

```
Writing additional settings to db. If these settings already exist, psql will report an error, but ok to disregard.
```

```
ERROR: insert or update on table "permission" violates foreign key constraint "permission_user_id_fkey"
```

```
DETAIL: Key (user_id)=(1) is not present in table "user".
Node installation is complete.
```

Execute the following:

```
[root@spock bin]# ./esg-node --install-keypair /etc/tempcerts/hostcert.pem /etc/tempcerts/hostkey.pem
...
Please set the password for this keystore :
Please re-enter the password for this keystore:
...
certfile> /etc/tempcerts/cacert.pem
certfile>
...
Is the above information correct? [Y/n]
Is the above information correct? [Y/n]
```

Restart the node:

```
[root@spock bin]# ./esg-node restart
```

## Known issues

### #error "Pycogp requires PostgreSQL client library (libpq) >= 9.1

This error occurs sometimes during installation but removing the node and installing it from scratch seems to solve it..

```
Traceback (most recent call last):
  File "setup.py", line 110, in <module>
    """
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/distutils/core.py", line 111, in setup
    _setup_distribution = dist = klass(attrs)
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/setuptools/dist.py", line 239, in __in
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/setuptools/dist.py", line 263, in fetc
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/pkg_resources.py", line 568, in resolv
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/pkg_resources.py", line 806, in best_m
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/pkg_resources.py", line 818, in obtain
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/setuptools/dist.py", line 313, in fetc
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/setuptools/command/easy_install.py", l
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/setuptools/command/easy_install.py", l
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/setuptools/command/easy_install.py", l
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/setuptools/command/easy_install.py", l
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/setuptools/command/easy_install.py", l
  File "/usr/local/uvcdat/2.2.0/lib/python2.7/site-packages/setuptools-1.4-py2.7.egg/setuptools/command/easy_install.py", l
distutils.errors.DistutilsError: Setup script exited with error: command 'gcc' failed with exit status 1

Sorry...
This action did not complete successfully
Please re-run this task until successful before continuing further

Also please review the installation FAQ it may assist you
https://github.com/ESGF/esgf.github.io/wiki/ESGFNode%7CFAQ
```

### Failed building wheel for Pillow

This error seems unavoidable but it also seems that it doesn't affect the esgf functionality.

## References

- [?ESGF Installation From Scratch](https://github.com/ESGF/esgf.github.io/wiki/ESGFInstallationFromScratch)