Installing a Single-Host Cluster on Linux

Platform EGO
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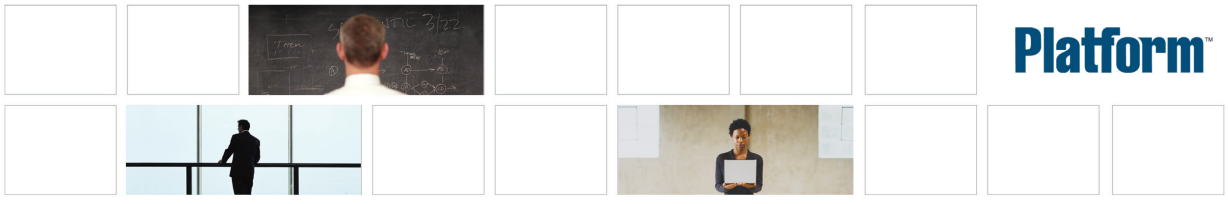

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Using this guide

This guide describes installing EGO on a single Linux host for evaluation purposes.

In a single-host cluster, the master host functions as both management and compute host, so you do not need to worry about these concepts. The cluster name is `cluster1`.

Caution:

If you want to install a production cluster, see *Planning and Installing Your Cluster on Linux*. For a cluster of multiple hosts, you must choose management and compute hosts, and plan the entire cluster more carefully before you install.

Single-host cluster

To install quickly for evaluation purposes, set up a single-host cluster by following the steps in Install a single-host cluster.

Migration to a multiple-host cluster

After you have finished testing or demonstrating your single-host cluster, you can convert your host to the master host of a multiple-host cluster by following the steps in the Appendix.

Do not move this multiple-host cluster into production unless your original host is suitable to become master of a large production cluster. The following is the suggested requirements for the master host of a large production cluster:

- For a management host (which includes the master host), we suggest at least a 1- or 2-CPU (>2.0GHz) computer with 4GB RAM, 30GB storage.

CHAPTER

1

Install a single-host cluster

1. Prepare for installation:
   a) Obtain the necessary files.
   b) Check ports.
   c) Check the installation directory.
2. As `root`, set up the cluster administrator and deploy the software:
   a) Define the database host.
   b) Define the cluster administrator.
   c) Run the RPM package.
   d) Set the command-line environment.
   e) Grant root privileges to egoadmin.
3. As `egoadmin`, configure and test the cluster:
   a) Set the command-line environment.
   b) Join the host and the cluster.
   c) Configure the license.
   d) Start the host.
   e) Test the web server.

You can use this host to test or demonstrate some of the functions you would perform in a production cluster.

If you want to convert the host into a functional master host of a production clutser, follow the steps described in Migrate to a Multiple-Host Cluster.

Obtain the necessary files

- Contact Platform Computing to obtain these files:
  - Demo license
  - Installation package

Obtain a demo license

1. For a single-host cluster, obtain a temporary license to be used for evaluation purposes.

Tip:

Copy the licence file to your host. Remember the location so you can configure the license after you install.

Obtain an RPM installation package

1. For a single-host cluster, obtain the RPM package that matches the kernel and glibc version of your host.

   For example, for x86 hosts running Linux 2.4 with glibc version 2.3, install the package named `ego-linux2.4-glibc2.3-x86-2.0.`*`nnnnnn`*`.rpm`.

Tip:

Run `uname -a` on the host to check the kernel version. Run `rpm -q glibc` on the host to check the glibc version.

Check ports

The installation requires the following ports. Make sure these ports are not being used by another application.

- 7869
- 7870
- 7871
- 7872
- 7873
- 8080
- 8005
- 8009
- 9090
- 53
- 1527

Note:

Use `netstat -a |grep <port_number>` and if nothing returns, <port_number> is free.

Check the installation directory

- By default, the installation will create the `/opt/ego` directory and copy files there.

  If you cannot install to `/opt`, or in the unlikely event that the `ego` subdirectory is being used for some other purpose, you have a conflict.

Log on as root

Log on as `root` and take the following steps.

1. Define the database host.
2. Define the cluster administrator.
3. Run the RPM package.
4. Set the command-line environment.
5. Grant root privileges to egoadmin.

Define the database host

The database host will run the Derby database and manage data for the Reporting feature.

Tip:

If you do not define the database host, there is no data available for reports.

To configure the master host as the database host, set the DERBY_DB_HOST variable.

Set cluster properties using variables

Set custom variables before installation if you wish to customize the cluster properties.

You can set environment variables according to your login shell. If you do not wish to use environment variables, create a simple text file `/tmp/install.config` and enter each variable on a new line. An environment variable is ignored if the same variable is set in the cluster properties configuration file.

- For `sh`, `ksh`, or `bash`: **export** *VARIABLE_NAME*=*value*
- For `csh` or `tcsh`: **setenv** *VARIABLE_NAME value*
- In `install.config`: *VARIABLE_NAME=value*

1. To make `hostM` the DB host:
   - For `sh`, `ksh`, or `bash`: **export DERBY_DB_HOST=hostM**
   - For `csh` or `tcsh`: **setenv DERBY_DB_HOST hostM**
   - In the cluster properties configuration file: **DERBY_DB_HOST=hostM**

Define the cluster administrator

The cluster administrator will be the only non-root account that can start the cluster or edit configuration files. You can make any account the cluster administrator, but you cannot change it after installation.

Tip:

If you can create a new user account named egoadmin, do so, and skip the rest of this procedure. By default, the installer automatically makes egoadmin the cluster administrator (but it cannot create the account if it does not exist).

To use your own user account as cluster administrator, set the CLUSTERADMIN variable, and substitute the actual name of your own account whenever the documentation refers to `egoadmin`. This is just like setting the DERBY_DB_HOST variable.

Run the RPM package

1. Run RPM using the default installation options:

   rpm -ivh *package_name*.rpm

   package_name.rpm is the name of the RPM package.

   For example:

   rpm -ivh ego-linux2.4-glibc2.3-x86-2.0-*nnnnnn*.rpm

Set the command-line environment

On Linux hosts, set the environment before you run any EGO commands. You need to do this once for each session you open. Both root and egoadmin accounts use EGO commands to configure and start the cluster.

You need to reset the environment if the environment changes during your session, for example, if you run egoconfig mghost, which changes the location of some configuration files.

These examples assume the default installation directory /opt/ego.

- For csh or tcsh, use cshrc.ego:

  source /opt/ego/kernel/conf/cshrc.ego

- For sh, ksh, or bash, use profile.ego:

  . /opt/ego/kernel/conf/profile.ego

Grant root privileges to egoadmin

By default, only root can start, stop, or restart the cluster.

This step gives egoadmin (the cluster administrator) permission to do these things also.

1. Run the egosetsudoers.sh command.

   When you run egosetsudoers.sh, it does the following:

   It creates the /etc/ego.sudoers file. The file owner is root and the permissions are set to 600 because you ran this command as root. Only the root user can edit this file.

   It will setuid the egosh command and change the owner of egosh to root.

   Whenever you see instructions to log on as root to start, stop, or restart a host in the cluster, you may log on as egoadmin instead.

Log on as egoadmin

Log on as `egoadmin` (the cluster administrator account you made during installation) and take the following steps:

1. Set the command-line environment.
2. Join the host and the cluster.
3. Configure the license.
4. Start the host.
5. Test the web server.

Set the command-line environment

Set the command-line environment for `egoadmin`, same as you did for `root`.

- For `csh` or `tcsh`, use `cshrc.ego`:

  source /opt/ego/kernel/conf/cshrc.ego
- For `sh`, `ksh`, or `bash`, use `profile.ego`:

  . /opt/ego/kernel/conf/profile.ego

Join the host and the cluster

This step is necessary, even for a single-host cluster.

1. Run `egoconfig` to join the cluster.

   For example:

   egoconfig join HostM

Configure the license

1. Run `egoconfig` to configure the license.

   Specify the full path to your license file:

   egoconfig setlicense *license_file_path*

   For example:

   egoconfig setlicense /tmp/platform/license.dat

This command copies your license file from the location specified by *`license_file_path`* to the $EGO_CONFDIR directory, names the file `license.dat`, and sets the license file path in `ego.conf`.

Start the host

1. Run `egosh` to start EGO on your host.

   egosh ego start

Test the web server

1. Launch any web browser and visit this URL.

   `http://`*`master_host_name`*`:8080/Platform`

If you see the Platform Management Console web page, your web server is running.

2. Log on to the Console and check host status (optional):
   a) User Name: Admin
   b) Password: Admin
   c) On the Cluster Health section of the Cluster Health Dashboard, check the host status of the master host is ok.

> **Tip:**
>
> This may take several minutes, depending on your cluster and host configuration.

Resolve port conflicts

- Connection ports
- Web server ports
- SD port
- Database host port
- Web service gateway port

Resolve connection ports

The default base connection port is 7869. EGO uses five consecutive ports starting from this base port (7869-7873).

1. You must set the BASEPORT variable to the base port that you choose.
2. If there is a conflict, choose any free port as base port, and check that the next three ports are also free.

   For example, if you choose 7939 as your base port, check that ports 7939-7942 are not in use.

Resolve web server ports

Ports 8080, 8005, and 8009 are used by the web server.

1. If there is a conflict, edit the Connector port value in `opt/ego/gui/tomcat/conf/server.xml`.
2. Replace all occurrences of the default port numbers with the actual ports you want to use

Resolve the SD port

1. Ensure that port 53 is free (the default DNS server port).

Database host port

1. Ensure that port 1527 is free (the default Derby database port).

Web service gateway port

Port 9090 is used by the web service gateway.

1. Ensure that port 9090 is free to be used by the web service gateway.
2. If there is a conflict, go to the EGO configuration directory and edit `wsg_port` in `opt/ego/kernel/conf/wsg.conf`.

Resolving installation directory conflicts

If you cannot use the default installation directory, choose any directory on your host as the installation directory. The installer will create the directory if it does not already exist. If it already exists, make sure it is empty.

Read this section, then return to the default procedure (Define the cluster administrator). However, when it is time to run the RPM package, install to a custom directory using these instructions instead of the default instructions.

1. Find your RPM version.
2. Install to a custom installation directory.

Find your RPM version

To find out which version of RPM you are using, use the `rpm --version` option. Different versions of RPM require different options to install the packages.

1. **rpm --version**

   ```
   RPM version 4.2.3
   ```

   If you have RPM version 4.1.x or earlier: Some versions of RPM do not support the `--prefix` option. If the `--prefix` option is not supported, you need to set the RPM_INSTALL_PREFIX variable and specify the installation directory you want. This is just like setting the DERBY_DB_HOST variable; use one of the methods described in Define the database host.

Install to a custom installation directory

1. Run RPM and specify the installation directory:

   - For RPM version 4.2.*x* or later:

     rpm -ivh --prefix *install_dir package_name*.rpm

     - *`install_dir`* is the installation directory
     - *`package_name`*`.rpm` is the name of the RPM package

     For example:

     rpm -ivh --prefix /opt/test/ ego-linux2.4-glibc2.3-x86-2.0-*nnnnnn*.rpm
   - For RPM version 4.1.*x* or earlier, if the `--prefix` option is not supported, set one more environment variable before you run the package:

     setenv RPM_INSTALL_PREFIX *install_dir*

     rpm -ivh *package_name*.rpm

     - *`install_dir`* is the installation directory
     - *`package_name`*`.rpm` is the name of the RPM package

     For example:

     setenv RPM_INSTALL_PREFIX /opt/test

     rpm -ivh ego-linux2.4-glibc2.3-x86-2.0-*nnnnnn*.rpm

   The installer will create the installation directory if it does not already exist.

CHAPTER

2

Migrate to a Multiple-Host Cluster

Before migrating your host, check the following:

- That you have a functional single-host cluster
- That you have the guide titled *Planning and Installing Your Cluster on Linux*
- That, at a minimum, you read and performed the necessary actions listed in "Chapter 2: Plan Your Cluster" in *Planning and Installing Your Cluster on Linux*. For example,
  - You prepared the additional management hosts and compute hosts to be added to your cluster
  - You set up your file server (`HostF`) with a shared directory accessible to other hosts in the cluster (`/share/ego`)

After successfully testing your single-host cluster, you may wish to convert your host into a master host for use in a multiple-host cluster. To do this, you need to reconfigure your host to function in a cluster containing more than one host.

This appendix is intended to be a replacement for "Chapter 3: Install the Master Host" in the *Planning and Installing Your Cluster on Linux* guide, because you do not need to install a new master host if you migrate your host to a master host.

Note that the database installed with a single-host cluster functions with a multiple-host cluster but is not supported in a production environment. To make the Reporting feature work in a production cluster, you will also have to move to a commercial database, as described in *Administering Platform EGO*.

The following steps summarize the migration of your single-host cluster to a master host for use in a multiple-host cluster.

1. Log on to the host as `egoadmin`.
2. Set the command-line environment.
3. Reconfigure the host.
4. Set the command-line environment.
5. Start the host.
6. Test the host role.

Set the command-line environment

On Linux hosts, set the environment before you run any EGO commands. You need to do this once for each session you open. Both `root` and `egoadmin` accounts use EGO commands to configure and start the cluster.

You need to reset the environment if the environment changes during your session, for example, if you run `egoconfig mghost`, which changes the location of some configuration files.

These examples assume the default installation directory `/opt/ego`.

- For `csh` or `tcsh`, use `cshrc.ego`:

  ```
  source /opt/ego/kernel/conf/cshrc.ego
  ```

- For `sh`, `ksh`, or `bash`, use `profile.ego`:

  ```
  . /opt/ego/kernel/conf/profile.ego
  ```

Reconfigure the host

Reconfigure your single-host cluster for use as a master host in a multiple-host cluster.

Your host currently stores its configuration files in a local directory. You need to redefine your host to store its configuration files in a shared directory so you can add other management hosts to your cluster. This is necessary to convert your single-host cluster into a multiple-host cluster.

Redefine the host as a management host only

Redefine your host to be a management host only. You need a shared directory to store important files.

Take this step on every management host, including all master candidates.

1. Run the `egoconfig mghost` command:

   egoconfig mghost *shared_dir*

   where *shared_dir* is the shared directory that will contain important files such as configuration files to support master host failover.

   For example:

   egoconfig mghost /share/ego

After you run `egoconfig mghost`, the host:

- Has access to important system files on the shared directory
- Belongs to the ManagementHosts host group.

Remember:

The shared directory is the same for all management hosts.

Set the environment to make the new configuration take effect.

Set the command-line environment

Set the command-line environment for the shared directory, same as you did for the default directory.

- For `csh` or `tcsh`, use `cshrc.ego`:

  source /share/ego/kernel/conf/cshrc.ego
- For `sh`, `ksh`, or `bash`, use `profile.ego`:

  . /share/ego/kernel/conf/profile.ego

Enable automatic startup

This is optional.

Automatic startup

By default, you must start EGO manually if a host restarts.

Tip:

For ease of administration, you should use `egosetrc.sh` to enable automatic startup. This feature starts EGO automatically when the host restarts.

Enabling automatic system startup creates an `ego` link under: `/etc/rc.d/init.d`

Set automatic startup on your host

1. Run the command `egosetrc.sh`.

Start the host

1. Run `egosh` to start EGO on your host.

   egosh ego start

Test the host role

1. Make sure the host has been removed from the ComputeHosts group in your cluster:

   egosh resource group ComputeHosts

   If you cannot see the host name in the Resource List in the ComputeHosts group, the host is successfully configured as a management host only.

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