ECCE Builder Installation

Overview

The ECCE Builder can be installed and run on most Linux 32- and 64-bit operating systems such as Red Hat Enterprise Linux, Debian, Ubuntu, OpenSUSE, and Mint. This includes both native and virtual machine Linux installs using VirtualBox (http://www.virtualbox.org) or VMware (http://www.vmware.com). Installing Linux as a virtual machine allows sites with only Windows or Macintosh OS X workstations to run the ECCE Builder. A minimum of 2 GB of memory is needed to run both your Linux operating system and the ECCE Builder although 4 GB or more is recommended. The minimum free disk space needed to install the ECCE Builder is 250 MB.

The ECCE Builder uses the wxWidgets GUI toolkit, which is built on the Gtk toolkit with the base X Window System and OpenGL for visualization. Linux workstations running the ECCE Builder must have either 32-bit i686 processors or 64-bit x86_64 processors constrained by the memory and disk space requirements mentioned above. The ECCE Builder software can be installed on each individual workstation on which it will be run, or preferably in a multi-user environment, on a shared file system such as NFS or AFS that each workstation accesses.

Download ECCE Builder Binary Distribution or Build Source Distribution

Instructions for obtaining the ECCE Builder can be found on the ECCE website at http://ecce.pnl.gov. The download website has both 32- and 64-bit binary distributions and a source code distribution. Binary distributions are provided for both the ECCE Builder application and the full ECCE software suite. Although the ECCE Builder binary distribution is built on Red Hat Enterprise Linux (the operating system supported for the EMSL where ECCE is developed), this distribution should run on a variety of Linux operating systems. This is possible by bundling all the shared libraries required for the ECCE Builder including system libraries that are normally present on most Linux systems, but may not be fully compatible with what was used to create the ECCE Builder binary distribution on Red Hat. The ECCE Builder binary distribution has been tested with operating systems including Debian, Ubuntu, OpenSUSE, and Mint in addition to Red Hat.

Sites having difficulty using the ECCE Builder binary distributions those considering modifying or adding to ECCE code, or those just wanting a better understanding of the ECCE software can download and build ECCE from the source code distribution. The results from completing an ECCE source code build as documented in the build/README file in that distribution (the build directory is not included with the ECCE Builder binary distribution) will be an ECCE Builder binary distribution specific to the Linux operating system and hard platform on which it was built. This new ECCE Builder binary distribution is identical in structure to those downloadable from the ECCE website and thus the install documentation herein should be followed to complete the installation.

Using a web browser, download the desired ECCE distribution for your platform to a local disk directory. File size for downloading is displayed on the web page although having sufficient additional free disk space during installation is critical since ECCE distributions are compressed and extraction will multiply the size requirements. This document assumes that either an ECCE Builder binary distribution is downloaded or that a source code distribution has been downloaded, built, and a new ECCE Builder binary distribution has been generated from that build as the starting point for the installation procedures given below. Full ECCE binary distribution installations are documented separately.

Install ECCE Builder

The installation procedures assume a basic familiarity with UNIX/Linux system administration. Commands given are for sh and also apply to bash; if you are using another shell such as csh or tcsh, you may need to adjust the syntax.

In order to maintain the integrity of the installation, we recommend creating an account named ecceadm, for "ECCE Administrator", or something similar and installing as that user. There are many configuration files, along with the Builder executable and libraries that if removed or improperly modified will corrupt the installation.

The ECCE Builder distribution itself is a self-extracting C shell installation script along with bzip2 format compressed tar files containing the Builder application software. The installation script prompts for configuration settings and then performs the installation.

Run the install_ecce_builder.*.csh script in the directory where it was downloaded. You may need to add execute permission to the file first. Note that values in square brackets are defaults and you may simply hit return to use a default. For clarity, values are always explicitly entered for the prompts in this sample install even when the default value is used. Here is the sample invocation of install_ecce_builder.*.csh, run as ecceadm with links to notes describing how to determine appropriate values for each of the configuration settings:

prompt$ **cd /myfiles**
prompt$ **chmod +x ./** install_ecce_builder.v6.4.rhel5-gcc4.1.2-m64.csh
prompt$ **./** install_ecce_builder.v6.4.rhel5-gcc4.1.2-m64.csh

Extracting ECCE Builder distribution from ./install_ecce_builder.v6.4.rhel5-gcc4.1.2-m64.csh...

ECCE Builder installation directory: [/myfiles/ecce-builder-v6.4] **/sharednfs/ecce-builder-v6.4**

ECCE Builder v6.4 installation directory: [/sharednfs/ecce-builder-v6.4]

Is this choice correct (yes/no/quit)? [yes] **yes**

Installing ECCE Builder in /sharednfs /ecce-builder-v6.4...

Extracting ECCE Builder distribution...
Extracting client WebHelp distribution...
Configuring ECCE Builder...

ECCE Builder installation succeeded.

```
******************************************************
!! You MUST perform the following step to use the ECCE Builder!!

-- Before running the ECCE Builder each user must source a
   setup script.  For csh/tcsh users, add this to ~/.cshrc:
     if ( -e /sharednfs/ecce-builder-v6.4/scripts/runtime_setup ) then
        source /sharednfs/ecce-builder-v6.4/scripts/runtime_setup
     endif
   For sh/bash users, add this to ~/.profile or ~/.bashrc:
     if [ -e /sharednfs/ecce-builder-v6.4/scripts/runtime_setup.sh ]; then
        . /sharednfs/ecce-builder-v6.4/scripts/runtime_setup.sh
     fi
******************************************************
prompt$
```

After the install_ecce_builder.*.csh script has completed, you may delete the distribution script although we recommend waiting until the Builder is completely tested at your site.

The next several paragraphs describe how to choose appropriate values for the ECCE Builder installation prompts as shown above. If you have successfully run the installation script and understand the prompts, you may skip to Post-Install Configuration to continue with the installation.

ECCE Builder installation directory: The ECCE Builder is designed for installation under a single shared directory at a site, with all hosts accessing the common installation. A local file system disk is selected for the installation directory when the Builder will only be run from a single machine. If you have a shared file system and will have multiple machines and/or platforms running the Builder, we recommend installing under the shared file system as it reduces parallel administration. The shared directory where the Builder is installed is independent of the directory where the distribution script is run, although the default will be a subdirectory of the run directory. For access from multiple machines the distribution is typically downloaded to local disk to speed file transfer, and then installed to a shared file system. This file system should have at least 200 megabytes free for each platform that will be installed. To install multiple platforms to a shared file system, specify the same Builder installation directory for each platform (requires downloading and running the installation script distribution for each platform). The installation script automatically extracts platform-dependent libraries and executables into separate subdirectories. The absolute path to the directory where the ECCE Builder is installed is stored in the ECCE runtime setup and runtime_setup.sh scripts as the environment variable $ECCE_HOME. The rest of this document uses the term "ECCE Builder installation directory" and slight variations interchangeably with $ECCE_HOME, especially when referring to file paths.

You are not allowed to overwrite an existing ECCE Builder installation except in the case where you are installing different platforms under the same top-level directory. The installation script will verify that the directory specified is not a previous installation for the same platform and prompt for a new directory if it is. This restriction prevents the inadvertent loss of a working installation should the new one have some kind of problem. If you do wish to install a new version of the ECCE Builder in the same top level directory as an existing installation for the same platform, you must move the old installation to another directory prior to running the install_ecce_builder.*.csh script. We recommend that you only remove an existing installation after you have verified the operation of the new installation.

Is this choice correct: Pressing return or entering "yes" results in the ECCE Builder installation completing under the specified installation directory. Entering "no" results in the installation directory being prompted for again.

Post-install Configuration

- **Change the Default Web Browser**

The ECCE Builder uses a web browser for online help and the user support request web page. At this time Firefox and Mozilla are compatible with how the ECCE Builder controls the display of web pages externally (KDE Konqueror, for instance, does not allow the control needed). By default Firefox is configured as the web browser within the ECCE Builder. This can be changed by editing the $ECCE_HOME/siteconfig/site_runtime file and scrolling down to the entries for web browsers. The only valid values for the browsers are "firefox" and "mozilla".

Setup Users' Environment

- For sh and bash users, add the following lines to their ~/.profile or ~/.bashrc file, substituting the correct path under which the ECCE Builder was installed on your host:

  ```
  # setup to run ECCE Builder
  if [ -e /sharednfs/ecce-builder/scripts/runtime_setup.sh ]; then
    . /sharednfs/ecce-builder/scripts/runtime_setup.sh
  fi
  ```

- There is an equivalent script named runtime_setup in the same directory that can be sourced for csh and tcsh users in their ~/.cshrc (~/.mycshrc within EMSL) file, substituting the correct path under which the ECCE Builder was installed on your host:

  ```
  # setup to run ECCE Builder
  if ( -e /sharednfs/ecce-builder/scripts/runtime_setup) then
    source /sharednfs/ecce-builder/scripts/runtime_setup
  endif
  ```

Hint: Within EMSL, we maintain a symbolic link named scripts in a top-level shared ECCE Builder directory that contains multiple releases of the Builder. The scripts link points to the scripts directory for the current production version of the ECCE Builder. This way the ECCE administrator only needs to update this link to change the version all ECCE Builder users are running. Users wishing to run other than the default version the symbolic link points to can change their environment setup file to reference the runtime_setup or runtime_setup.sh script for the desired version. The path to runtime_setup and runtime_setup.sh under /sharednfs/ecce-builder/scripts in the example above is based upon this mechanism. In the example installation, ECCE was installed under /sharednfs/ecce-builder-v6.4. A symbolic link in the /sharednfs/ecce-builder directory named scripts pointing to /sharednfs/ecce-builder-v6.4/scripts will make it easier for the ECCE administrator to upgrade users to new versions of the ECCE Builder. The commands to do this for the example installation are:

prompt$ **mkdir /sharednfs/ecce-builder**
prompt$ **cd /sharednfs/ecce-builder**
prompt$ **ln -s ../ecce-builder-v6.4/scripts scripts**

- Logout then log back in again to make sure the environment is properly setup. Enter the command "which ebuilder" to make sure paths are correct.

Run ECCE Builder

- Start the ECCE Builder by typing...

  prompt$ **ebuilder**

- Where to go for help

  Check out the ECCE Builder help pages on the web at http://ecce.emsl.pnl.gov/cgi-bin/help/toolhelp?builder, which are also accessible from within the ECCE Builder under the menubar Help menu. Also visit the user FAQ and Release Notes for the current and previous releases of ECCE, including the Builder application. The release notes serve as the most up-to-date and complete documentation of ECCE Builder features.