Getting Started In the Unified Linux Environment

The School of Informatics, Computing, and Engineering (SICE) manages hundreds of Linux systems in a common environment called the *Unified Linux Environment*. The systems in this environment share file server space and software installations so that you can transparently move between systems and have a very common environment that follows you from system to system. This page is intended to provide an introduction to this environment to get you up and running as quickly as possible and to answer common questions that are likely to arise.

**What Systems Are Available?**

There are unified linux workstations in various labs and offices through SICE. Furthermore, there are many servers available for remote processing and jobs needing higher numbers of processors and memory. This KB page describes the systems that are available to SICE Faculty, Staff, and Students as well as non-SICE students taking SICE classes:

* What Linux systems are available?

You can also see what accounts you have on the Unified Linux Systems per this KB page:

* How do I get detailed information about my Linux accounts?

**What Software Is Available?**

We have a large body of software installed on the Unified Linux Systems and use several mechanisms to make this software available, including environment modules and Red Hat Software Collections. Please see the following KB page for detailed information about the installed software that is available as well as how to get new software installed:

* How do I get new or updated software installed on the unified Linux systems?

The following KB entry gives detailed information about how to use environment modules, which is a primary mechanism for accessing software. For example, there are currently about 7 different versions of python available, all with lots of modules installed.

* What are modules on the Linux systems and how do I use them?

We also have detailed information about how to access installed python modules and get new python modules installed. It also shows how you can install python modules for your own use without needing sudo/root.

* Installing Python Modules In Linux

**What Storage Space Is Available?**

By default, you will have a home directory (*.HOME*) that comes from a central file server. This means that your home directory is automatically backed up nightly and is also available from all the other unified linux workstations and servers. The downside is that you have a relatively small (5-10GB) disk quota. If you need additional space and/or faster local filesystem space then you have options available to you per this KB page:

* What data storage space is available on the unified Linux systems?

**What Network Services (eg. web, database, etc) Are Available?**

We have a number of servers available in the Unified Linux Environment for things like web and database services. See the following KB pages for more information:

* Web Hosting Options

  * How do I use PHP on the SICE web server?

  * How do I run CGI scripts on the SICE web server?

  * How do I get access to a MySQL, Oracle, PostgreSQL, or MS SQL database?

We also have a framework in place so you can run your own services and have them be remotely accessible. See this KB page for more information:

* Can I run my own web, database, or other server on the unified linux systems?
Can I Have Root/Sudo Access?

You will not, by default, have root/sudo permissions on these systems. There are a number of reasons for this including IU and SICE IT policy and more practical usability reasons. These systems are running Red Hat Enterprise Linux (RHEL) in a centrally managed environment that makes it impractical for each system user to have full root permissions. If we did that, it would be highly likely that you would make system changes that would conflict with the central configuration management and that system would be stepping on changes you would make. Furthermore, installing software in this environment is much more complicated than a simple ‘apt-get’ like you would do on a typical Ubuntu system (and, BTW, RHEL doesn't even use the apt package manager). So, we install software in a way such that once it is installed on one system it is automatically available on the several hundred other RHEL systems. The software you need is likely already available (perhaps via environment modules per the above section) and, if not, then we can install it for you and then it is available to all users.

Having said that, there are cases where sudo permission are needed and we have a policy and procedure to address that:

IT Policy: Administrator Access and Self-Managed Systems

If you have such a need then you can submit the request for sudo permission on your Unified Linux System per this policy page.

How Do I Customize the GUI?

If you are using one of the Linux workstations from the GUI console (as opposed to logging in remotely via ssh) then you will be using the Gnome 3 desktop environment. There is lots of information on the web about how to use Gnome 3 but we also have a page with some information about local customizations that may be helpful:

Red Hat Enterprise Linux 7 (RHEL7) Migration Notes

How Do I Get Help On These Systems?

Help is provided by the SICE Infrastructure and Technology Group (ITG). Please see this KB page for information on how to get help from the SICE ITG:

How do I ask for help with a technology or facilities issue?