Computer Science Laboratory (CSL)
Facilities Introduction

Department of Computer Science, Duke University
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> Welcome to the Department of Computer Science at Duke University. This is a brief introduction to our computing facilities.

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1   Getting Help

1.1   Contacts

- For computing related issues, you may contact the Computer Science Laboratory (CSL) Staff. Details are available below, and at the CSL web pages: **http://www.cs.duke.edu/csl/** .

- For building and telephone related issues, send a message to *house@cs.duke.edu* . This includes phones

and copiers, bathrooms, air conditioning, etc.
- To see which other departmental mailing lists are available, see the file */etc/aliases* on the Unix/Linux systems.

You can find phone numbers and e-mail addresses of CS members and facilities on the department web site at **http://www.cs.duke.edu/people/** .

1.2   Questions / Requests

While members of the CS Lab Staff are usually willing to answer user questions, we do have limited capacity, and our priorities focus mainly on supporting the departmental infrastructure. To that end, we encourage users to seek answers to general configuration, environment, "How do I …," and programming questions via the following resources:

- **Online CSL documentation: http://www.cs.duke.edu/csl/** ;

- **Online manuals ("man pages"):** In a text window, type `man item` or `man -k item` (item is a word for a command, system-call, library, etc., that you're looking for);

- **Fellow department members:** Ask one of your colleagues;

- **Web search:** Try answering your question via your favorite search engine;

If none of these resources provides the answers needed, *then* contact the Lab Staff with detailed information about your issue:

E-mail: request@cs.duke.edu

Web: http://www.cs.duke.edu/csl/requests/

1.3   Problems / Emergencies

Technical problems with the network, hardware, software, or security should be reported to the problem/request e-mail address, *request@cs.duke.edu* . The method of reporting problems depends on the day and time. CSL hours and reporting methods are:

- **Weekdays:** At least one of the Lab Staff is usually here from 8:00am to 6:00pm. Send e-mail to *request@cs.duke.edu* (preferred), phone, or stop by;

- **Evenings, Weekends and Holidays:** Call the pager *for emergencies only*: 888-914-3340. For less urgent issues, please use: *request@cs.duke.edu* .

1.4   Online Resources

The department invests significant effort into providing online access to useful departmental information. This information is available via the department web site at: **http://www.cs.duke.edu/** .

Likewise, the CSL provides a repository of systems information via the CSL web site at **http://www.cs.duke.edu/csl/** , which includes: policies, FAQs, system and program documentation, online tutorials, etc. *Please explore the CSL web pages for a better understanding of our system resources and departmental computing infrastructure.*

2   Unix / Linux Accounts

The computer system in the CS department is mostly composed of servers and workstations that run variants of

the Unix operating system, primarily Linux (and more specifically, the popular Ubuntu distribution). Each authorized system user has a Unix account. The account is what gives you access to e-mail, data storage, programs, etc. Access to your account is via a *username* and *password*. Your username is also the first word in your departmental e-mail address (*username@cs.duke.edu*).

2.1 Logging In

To access or use your Unix account, you must first *login* (i.e., *log-in*). This can generally be done in either of two ways. When using a workstation with a graphical interface, you will usually enter your username (or account name) and password in labeled entry fields. When logging in via a terminal or terminal emulation (such as with SSH), you will be prompted for username and password.

2.2 Changing Passwords

To change your Unix password, *login* and – in a text (terminal) window – run the *passwd* command. You will be prompted once for your current password, and then twice (to avoid typographic errors) for your new password. The program we run will reject passwords that are too simple. Please try to provide a password that is at least ten characters long and is a mix of upper and lower case letters, digits, and punctuation. For a more detailed discussion of secure passwords, please see this web page: **http://www.cs.duke.edu/csl/security/general** .

2.3 Account Sharing

Any person with a valid reason for having an account on the CS computing facilities will be provided with one. Accounts are available to department faculty, staff, graduate and undergraduate students, and faculty-sponsored guests. *Under no circumstances should you allow anyone else to use your account! Do not tell anyone your password!*

3 Resources, Security, and Privacy

Security and privacy have become major issues in today's internetworked computing environment. The CS department has substantial interest in maintaining a secure and functioning departmental network – with robust access to the Internet – and the Lab Staff takes these requisites very seriously.

Various measures are taken to help keep our computing resources secure as well as connected with external resources. For more information on general security issues as well as secure access to departmental resources, please see the web pages at: **http://www.cs.duke.edu/csl/security/** .

3.1 Proper Use of Departmental Resources

The Lab Staff makes every effort to ensure that reliable computing systems are available to our users at all times. However, there are tools and methods available which allow unscrupulous individuals to misuse our computing systems, putting at risk the reliability and availability of department resources. It is the responsibility of all users to protect their own accounts, and to inform the system administrators of any suspicious activity or any discovered vulnerabilities on the department's computers. Additionally, each authorized user is expected to use their account responsibly and to not exploit system vulnerabilities or violate the privacy of other users. In the event that any activity engaged in by any system user appears to be illegal, law enforcement authorities may become involved.

3.2 Equipment

If you would like to use *any* equipment and haven't been specifically instructed in its proper use, *please ask someone*.

If you notice any damage to any equipment or equipment failure, please report it immediately by sending e-mail to *request*. Do not attempt to fix it yourself. In the case of computing equipment, this cannot be emphasized enough! No equipment is to be moved without the approval of the technical staff.

Please note that the machine rooms, e.g. D126, are off-limits to all but authorized personnel.

3.3 Workstations

Everyone who has an office in the CS department is provided with a workstation. This computer remains department property, and should not be moved or modified. Administrative staff get workstations that run Microsoft Windows. All others get a workstation running Linux without administrator access. If you prefer to have administrator access to your workstation, you can install whatever operating system you want, but your workstation must first be moved to the untrusted network by the Lab Staff. For more information, please see the section on *Networks*, below, and this web page: **http://www.cs.duke.edu/csl/facilities/desktops** .

3.4 Directory and File Permissions

Each account holder has the ability and responsibility to specify and control access to their directories and files, both in their home directory and in other areas of the filesystem (e.g., project space) where they create and maintain files. For more information on how to assess and update filesystem permissions, please see: **http://www.cs.duke.edu/csl/faqs/file-permissions** .

3.5 Browsing Personal Files

Files belonging to other users should *not* be assumed to be open to general browsing, even if they are inadvertently unprotected. It is considered an invasion of privacy to browse through a person's files without asking permission. It is permissible to read files meant for public access, such as those in a Web area or the FTP directory.

4   Services

4.1 Server Addresses

The CSL maintains servers providing various computing services for users both inside and outside the department. The following table lists several of common interest.

Duke CS Servers			
Service	*Hostname or IP address*	*OS*	*direct login*
Login server	login.cs.duke.edu	Linux	yes

Compute servers	linux.cs.duke.edu* gpu-compute*N*.cs.duke.edu**	Linux Linux	yes yes
Mail server (including IMAP & POP)	mail.cs.duke.edu***	Linux	no
Web server	www.cs.duke.edu	Linux	no
Webmail server	webmail.cs.duke.edu	Linux	no
CGI server	cgi.cs.duke.edu	Linux	no
DNS servers	152.3.140.1, 152.3.140.31	Linux	no

* Shared name for multiple computers *linuxN*.

** Replace *N* with a number.

*** Note that *cs.duke.edu* is an alias for *mail.cs.duke.edu*, which is a restricted server, thus an attempt to login via *username@cs.duke.edu* will fail..

4.2 Local Network Access

The department maintains several network subnets for various purposes:
http://www.cs.duke.edu/csl/facilities/subnets .

Trusted and Untrusted Networks

Most servers and lab-administered workstations are connected to the *trusted* network. These computers have access to core services such as NIS and NFS. Never disconnect these computers from the port they are connected to, and never connect a personal computer to those ports or any other port without prior approval from the Lab Staff.

We also maintain an *untrusted* network, which does not have access to certain department resources, but is fully connected to the Internet. Personal computers can be connected to this network; please ask the Lab Staff to activate a port for you. For more information, please see this web page:
http://www.cs.duke.edu/csl/faqs/trust.

Wireless Network

A wireless network is available, but it is maintained by the Duke Office of Information Technology (OIT). For information on registering your PC and accessing the wireless network, please see:
http://www.cs.duke.edu/csl/faqs/wireless .

4.3 Remote Access

In order to protect the department against unauthorized access, we have disallowed *insecure* access to the department facilities from outside the CS network. In order to access the system from the outside, you will need to use a secure (encrypted) connection. To ensure that our users are still able to access our resources from the

outside, we have set up several methods of access, and we have installed a program that will let you check your e-mail using only a web browser. For more information on this, please see this web page: **http://www.cs.duke.edu/csl/security/** .
The department also maintains secure servers that will allow anyone with a valid account to login to the department, assuming that they are using a *secure shell* (i.e., SSH) client program. We have provided a list of clients for various operating systems at this web page: **http://www.cs.duke.edu/csl/security/ssh** . We recommend that when you are outside of CS, and using SSH to login to CS, that you use *login.cs.duke.edu* or **l***inux.cs.duke.edu* as the hostname to connect to. Department members must arrange their own ISP service.

4.4   E-mail

C.S. E-mail

If you have a CS Unix account, then you almost certainly have a CS e-mail address: *username@cs.duke.edu* , where `username` is replaced with your actual username. You can access your e-mail via many e-mail client programs. You can use text-based clients, such as `pine`, `Mail`, etc. Or, you can use a GUI-based client, such as *Thunderbird*.

It is possible that when your account was created, your e-mail was set up to forward to another address; see *E-mail Forwarding* below.

Duke OIT E-mail

If you are a Duke employee, student, or affiliate, then you probably have an Office of Information Technology (OIT) computer account. The username for this account is also referred to as your *NetID* (Net[work]-ID). This is a separate account, and will have a separate username and password from your CS account, though sometimes the OIT username is identical to your CS username (for undergraduates and guests, we'll usually use a pre-existing NetID for the CS username). Your OIT account has an e-mail address *netid@duke.edu* . You may also have - or may set up - an OIT e-mail alias. Please see the OIT website for more information.

E-mail Forwarding

You may want to set up forwarding to either get all of your e-mail at CS, or all of it at OIT. *Do not do both!* That is, don't set up forwarding in both directions, or you'll have an infinite loop and annoyed systems staff. With either, you can tell it to forward *and* save a local copy, but, again, don't do this at both ends!

To forward e-mail from OIT to CS: Go to **http://www.duke.edu/online** . Login with your NetID. Under "Manage your email," select "Forward your mail," and follow the instructions. Enter your full CS e-mail address (*username@cs.duke.edu*).

To forward e-mail from CS to OIT: Login to your CS account. Edit the files *.procmailrc* and/or *.procmailrc.forward* in your top level home directory. Please see the comments in *.procmailrc* for instructions; you will see comments there on how to also keep a local copy. Please do not use a *.forward* file!

Forwarding e-mail elsewhere: You can forward your e-mail somewhere else (again, via *.procmailrc*), but you'll be on your own with that. That is, we can't troubleshoot problems with *Google* or *Yahoo* mail. And, you probably won't have much luck trying to contact customer service at those companies yourself. *Caveat emptor*.

More Information

Please see: **http://www.cs.duke.edu/csl/faqs/?section=email** .

4.5   Web Server

We of course maintain a web server for departmental information, research groups, classes, etc. But each user can also set up their own "home page." To do so, create a directory named *public_html/* in your home directory (it's probably already there). Place your web pages (files) into this directory. Create a file named *index.html* as your main page, and this will be accessible via a URL of the form: **http://www.cs.duke.edu/~username** (replace *username* with your username). This will automatically redirect to **https://users.cs.duke.edu/~username** .

The department web server also supports PHP; if you use this, then replace *.html* with *.php* in the previous paragraph. If your web site will include CGI programs, you will need to request a CGI account.

4.6   Database

MySQL database servers are maintained by the department. If you need a database, we can create one for you and give you a MySQL account so that you can manage it. You may also install and run your own database server.

4.7   Printing

Printers are available in most areas of the CS department: on each floor of LSRC, and in North. Please see: **http://www.cs.duke.edu/csl/faqs/?section=printing** .
Laser printers produce high-quality output on *letter-* or *legal*-size paper. When using the printers, please be considerate and add paper as needed. Talk to the administrative staff or send e-mail to *request* if there is no paper. Printouts (jobs) should be picked up as soon as possible after printing. Printouts left for more than three days may be recycled. We have also installed bins for the storing of print jobs. If you do not see your printed material, you should check the bins next to the printer – someone may have placed your job there.

Other Printing Considerations

Large print jobs should be avoided during the day when the demand for printer use is highest. When you send a large job to a department printer, please be sure to monitor the printing so it does not cause undue delays for others. Additionally, please do not use laser printers for multiple copies when a copier can be used: *duplicating with a copier is less expensive and saves money for the department.*

4.8   Software

Many public-domain and commercial software programs and packages are already installed on the CS network and individual computers. We can also install many other packages upon request. Additionally, Duke students, faculty, and staff have access to many commercial software titles through OIT. Please see: **http://software.duke.edu/** .

4.9   Backups

The CSL generates a variety of backups of departmental data, including home directories, project areas, e-mail, and some PCs. In many cases, you can retrieve your own files via the *snapshot* facility. For more information,

please see this web page: **http://www.cs.duke.edu/csl/faqs/?section=backups** .

Thank you for taking the time to better understand our departmental resources! Please contact the Lab Staff if you have any comments or additional questions.

If you are reading a paper copy of this document, you can also find an online, hyperlinked version at: **http://www.cs.duke.edu/csl/policy/account-intro.pdf** .