The Learning Online Network
with the
Computer-Assisted Personalized Approach

CONTENTS
--------
Opening
Configuration
Installation
Upgrading a LON-CAPA Server
FAQ
Download
Contact Information
License Information
Configuration Examples
In a software project that experiences continual improvement and where security and stability are important, we give great attention to the ease and maintenance of LON-CAPA on a Linux operating system.

On these pages you will learn how the LON-CAPA software system is

- definable
- configurable
- & testable

which improves the

- installation
- upgrading
- & code development

To learn general information about the LON-CAPA project, please visit [http://www.lon-capa.org/](http://www.lon-capa.org/)
There are about a dozen files on the LON-CAPA server systems which the system administrator may need to adjust.

The two most important configuration files are:

- **loncapa.conf** - typically located in the directory `/etc/httpd/conf/;
  contains machine-specific and institution-specific variables and modifications necessary for the effective running of the Apache web server; note that there is also a **loncapa_apache.conf** which should be installed, but not modified

- **hosts.tab** - typically located in the directory `/home/httpd/lonTabs/;
  is a listing of all other internet machines that a server system considers to be valid server systems on the LON-CAPA network

**Current Reconfiguration Procedure**

After making any configuration change, you will need to restart system services. The two most important system services on a LON-CAPA system are **loncapa** and **httpd**. Here are the commands for restarting the system services:

```
/etc/rc.d/init.d/loncapa restart
/etc/rc.d/init.d/httpd restart
```

We recommend that a knowledgeable system administrator should perform any adjustments on a LON-CAPA server machine. Locations of these files are by default. Depending on your Linux distribution—RedHat, Mandrake, Debian, etc, the file paths may be elsewhere.

**Configuration files that will have to be altered**

LON-CAPA currently depends on the following list of configuration files. Note that **loncapa.conf** is automatically altered by the installation/upgrade scripts associated with the tarball-distribution (see the INSTALL and UPGRADE sections of this web-site). (Thus, the system administrator should not have to further adjust **loncapa.conf** from the terminal.)

- [EXAMPLE (at end of document)] /etc/httpd/conf/loncapa.conf
- [EXAMPLE (at end of document)] /home/httpd/lonTabs/hosts.tab
- [EXAMPLE (at end of document)] /home/httpd/lonTabs/spare.tab
- [EXAMPLE (at end of document)] /etc/krb.conf
- [EXAMPLE (at end of document)] /home/httpd/lonTabs/htpasswd
- [EXAMPLE (at end of document)] /etc/ntp.conf
- [EXAMPLE (at end of document)] /etc/ntp/step-tickers
- [EXAMPLE (at end of document)] /etc/pam.d/pwauth
Configuration files that do not have to be altered

The following configuration files are critical for the correct performance of a LON-CAPA server machine. Typically, these configuration files do not need to be adjusted by the system administrator.

- [EXAMPLE (at end of document)] /etc/httpd/conf/loncapa_apache.conf
- [EXAMPLE (at end of document)] /home/httpd/html/res/adm/includes/un_keyword.tab

Configuring Secondary Services

LON-CAPA does not provide integrated support for secondary services. The expectation is that knowledgeable system administrators will customize these secondary services for their institution.

We do, however, provide example configurations of services that you may want to deliver with LON-CAPA (i.e. Samba and AppleChooser).

- [EXAMPLE (at end of document)] /etc/smb.conf
- [EXAMPLE (at end of document)] /etc/atalk/config
You will need to check all the following things to ensure proper installation of your LON-CAPA system.

- Creating a user ‘www’
- Make a LON-CAPA system work with shadow passwords
- Installing LON-CAPA files
- Checking your Linux RPMs
- Fixing /etc/hosts
- Configuring the MySQL database
- Testing to see if the LON-CAPA server is operational

**NOTE:** If you want to simultaneously install both RedHat 7.3 and LON-CAPA (to ensure 100% reliability), follow these alternative directions.

### Creating a user ‘www’

Execute the following command to create a user named ‘www’ on your LON-CAPA server:

```bash
/usr/sbin/useradd www
```

### Make a LON-CAPA system work with shadow passwords

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Is your system using shadow passwords? (Note: LON-CAPA will work with either MD5/non-MD5 configured systems). It is strongly recommended to use shadow passwords. If your system is currently not using shadow passwords, run the "pwconv" command (as root) in order to convert to shadow passwords. If you choose not to use shadow passwords, then do not perform any of the additional steps. If your system is using shadow passwords, then you will need to perform the additional steps below.  
  **How to detect:**  
  command: cat /etc/passwd | grep ' :x:'  
  If there is output such as "root:x:0:0:root:/root:/bin/bash", then your system is using shadow passwords and you will need to continue with the steps below. |
| 2    | **Retrieve the mod_auth_external source** by running the following command  
  ```bash
  wget http://www.unixpapa.com/software/mod_auth_external-2.1.15.tar.gz
  ``` |
### Unpack the mod_auth_external source

Unpack the mod_auth_external source by running the following command:

```bash
tar xzvf mod_auth_external-2.1.15.tar.gz
```

### Go to the pwauth directory

Go to the pwauth directory by running the following command:

```bash
cd mod_auth_external-2.1.15/pwauth/
```

### Edit config.h and change SERVER_UIDS definition

Edit `config.h` and change SERVER_UIDS definition:

Determine the user id of 'www':

```
id -u www
```

Change the line:

```c
#define SERVER_UIDS 99 /* user "nobody" */
```

to be:

```c
#define SERVER_UIDS 513 /* user "www" */
```

where in this example 513 corresponds to the user id of 'www'.

### Compile the pwauth executable

Compile the pwauth executable by running the following command:

```bash
make
```

### Install pwauth

Install pwauth by doing the following:

```bash
cp pwauth /usr/local/sbin/
chmod 6755 /usr/local/sbin/pwauth
```

Edit (creating the file) `/etc/pam.d/pwauth` to have the contents:

```bash
auth     required   /lib/security/pam_pwdb.so shadow nullok
auth     required   /lib/security/pam_nologin.so
account  required   /lib/security/pam_pwdb.so
```

### Installing LON-CAPA files

Download the most current `loncapa-current.tar.gz`:

```bash
wget http://install.lon-capa.org/versions/loncapa-current.tar.gz
tar xzvf loncapa-current.tar.gz
cd loncapa-N.N (N.N is the version number)
```

The `UPDATE` command will refresh your filesystem with all the latest LON-CAPA software.

```bash
./UPDATE
```
Checking your Linux RPMs

The CHECKRPMS command will check the RPMs on your machine against an FTP repository.

```
./CHECKRPMS
```

Also, please be sure to install the LON-CAPA-systemperl RPM as described on the Downloads page.

Fixing /etc/hosts

A common RedHat glitch of new installations (RedHat’s fault, not LON-CAPA) is the generation of /etc/hosts.

It should look something like this (except the myschool line should be replaced with settings specific to your machine):

```
127.0.0.1  localhost.localdomain localhost
12.34.56.78  www.myschool.edu myschool
```

Configuring the MySQL database

The following commands describe how to configure the MySQL database on your LON-CAPA server. Note:

- you should substitute ‘ROOTPASSWORD’ with something very hard to guess (it does not have to be the Linux OS root password)
- The MySQL www@localhost user must always have a password of ‘localhostkey’ in order for there to be correct operation of a standard LON-CAPA system.

The following instructions assume you are logged in as ‘root’.

Entering the mysql shell

```
mysql -u root -p mysql
OR
mysql -u root mysql (depending on whether you have set a root password)
```

Creating the mysql ’www’ user (after entering mysql shell)
mysql> CREATE DATABASE loncapa;

mysql> INSERT INTO user (Host, User, Password)
   VALUES ('localhost','www',password('localhostkey'));

mysql> INSERT INTO db VALUES ('localhost','loncapa','www',
   'Y','Y','Y','Y','Y','N','Y','Y','Y');

mysql> FLUSH PRIVILEGES;

SECURITY: set a password for the mysql 'root' user

shell> mysql -u root mysql
mysql> SET PASSWORD FOR root@localhost=PASSWORD('ROOTPASSWORD');

SECURITY: only allow access from localhost

shell> mysql -u root -p mysql
mysql> DELETE FROM user WHERE host<>'localhost';

Testing to see if the LON-CAPA server is operational

The TEST command will check the installation software, the perl libraries on your system, the MySQL database, and will also automatically test the real-time operation of the LON-CAPA Apache web server.

./TEST

Using the TEST command will likely be an iterative process. It is normal to expect that the TEST command will recommend you perform various steps to ensure optimal performance of your LON-CAPA server.
There are three steps for upgrading the software on your LON-CAPA server.

- **Upgrading LON-CAPA files**
- **Checking your Linux RPMs**
- **Testing to see if the LON-CAPA server is operational**

**Upgrading LON-CAPA files**

Download the most current [loncapa.tar.gz](http://install.lon-capa.org/versions/current/loncapa.tar.gz)

```
wget http://install.lon-capa.org/versions/current/loncapa.tar.gz
tar xzvf loncapa.tar.gz
cd loncapa
```

The **UPDATE** command will refresh your filesystem with all the latest LON-CAPA software.

```
./UPDATE
```

**Checking your Linux RPMs**

The **CHECKRPMS** command will check the RPMs on your machine against an FTP repository.

```
./CHECKRPMS
```

**Testing to see if the LON-CAPA server is operational**

The **TEST** command will check the installation software, the perl libraries on your system, the MySQL database, and will also automatically test the real-time operation of the LON-CAPA Apache web server.

```
./TEST
```

Using the **TEST** command will likely be an iterative process. It is normal to expect that the **TEST** command will recommend you perform various steps to ensure optimal performance of your LON-CAPA server.
Questions about anything and everything

Shown below are frequently asked questions others have about LON-CAPA installation and system management. For a more complete FAQ, you are strongly encouraged to visit

http://help.lon-capa.org/
The LON-CAPA files are released in a single *.tar.gz file.

- **Source code of LON-CAPA** it provides you with
  - network connectivity with other LON-CAPA computers around the world
  - processing and delivery of course material and problem sets to your students
  - classroom and course management
  - extensive new functionality for your web server
  - tools for monitoring the state of your system

After the download, please read the pages describing the configuration, installation, and upgrading of LON-CAPA.

**NOTE:** Additional downloads are also available.

- **Helpful resources for LON-CAPA**
  - an integrated approach for quickly installing both RedHat 7.3 and LON-CAPA (to ensure 100% reliability)
  - software packages for the quick installation of CPAN perl modules

**Source code of LON-CAPA**

Current Release is Version LATESTVERSION. This version was released on LATESTDATE.

Current Beta is Version 0.99.3. This version was released on June 27, 2003.

You can download the most current version of LON-CAPA at

You can download the current beta version of LON-CAPA at
[http://install.lon-capa.org/versions/loncapa-0.99.3.tar.gz](http://install.lon-capa.org/versions/loncapa-0.99.3.tar.gz) (version 0.99.3).


To view the code development history of LON-CAPA, you will need to use the CVS tool, the open standard for version control. Please contact Helen (helen@lon-capa.org) to request a CVS USERNAME.

The initial CVS commands would be:

```
export CVSROOT=:pserver:USERNAME@zaphod.lite.msu.edu:/home/cvs
cvs login
cvs co loncapa
```
For more information on using CVS, please visit [http://www.cvshome.org/](http://www.cvshome.org/) or read loncom/build/readme.html after downloading the current version of LON-CAPA as described above.

**Helpful resources for LON-CAPA**

The entire collection of helpful resources is located at [http://install.lon-capa.org/resources/](http://install.lon-capa.org/resources/).

Most users of LON-CAPA should install LON-CAPA by **simultaneously installing both RedHat 7.3 and LON-CAPA**. Step-by-step directions are available [here](http://install.lon-capa.org/resources/).

The "LON-CAPA and RedHat 7.3" tarball is located [here](http://install.lon-capa.org/resources/).

**LON-CAPA makes extensive use of perl modules** from [CPAN](http://cpan.org). To help you install all the necessary perl modules, there is a custom-compiled RPM for RedHat 7.* systems: [LON-CAPA-systemperl-3.5-rh7.i386.rpm](http://install.lon-capa.org/resources/).

*For RedHat 6.2 systems, you should instead use* [LON-CAPA-systemperl-3.5-1.i386.rpm](http://install.lon-capa.org/resources/).

To install the systemperl RPM, you should enter the following command:

```
rpm -Uvh --force LON-CAPA-systemperl-3.5-rh7.i386.rpm
```

The systemperl RPM will overwrite some of the files present in the regular RedHat perl RPM. This is okay; this will not likely cause problems.
Open Source = Open Spirit

Thank you for your interest in LON-CAPA. Please take a moment to review the content within our site, including Frequently Asked Questions. If you are unable to find information you are searching for, please contact us.

We welcome your interest in this educational endeavor. It is a very simple process to join our mailing lists and there is a simple web page for you to do so: [Announcement Mailing List]

For a fuller description of the people, goals, and contacts for the LON-CAPA project, you are encouraged to visit [http://www.lon-capa.org/](http://www.lon-capa.org/)
Freeware and the free Linux operating system mean better features, better support, and a more reliable future for your institution’s educational mission. Learn more about freeware and many other freeware success stories.

GNU General Public License
http://www.gnu.org/copyleft/gpl.html
(shown below)

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation’s software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the
source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author’s protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors’ reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone’s free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program’s source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer
to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and “any later version”, you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

<one line to give the program’s name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.
# Appletalk configuration
#
# This is an example configuration file for Appletalk; it is distributed
# with LON-CAPA. A typical location for this configuration file is:
#    /etc/atalk/config
#
# This is meant to configure netatalk software:
#    http://sourceforge.net/projects/netatalk
#
# This is supposed to allow old Mac/Apple systems to access a LON-CAPA
# filesystem over the network via the AppleChooser tool.
#
# Change this to increase the maximum number of clients that can connect:
# AFPD_MAX_CLIENTS=5
#
# Change this to set the machine’s atalk name:
# ATALK_NAME=`echo ${HOSTNAME}|cut -d. -f1`
ATALK_NAME=`grep '^PerlSetVar.*lonHostID' /etc/httpd/conf/loncapa.conf | perl -e
#
# Set which daemons to run:
# PAPD_RUN=no
# AFPD_RUN=yes
#
# Control whether the daemons are started in the background
ATALK_BGROUND=no
<table>
<thead>
<tr>
<th>Host</th>
<th>Domain</th>
<th>IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>morphyl1</td>
<td>morphy:library:grover.morphy.edu</td>
<td>12.34.56.99</td>
</tr>
<tr>
<td>abcl1</td>
<td>abc:library:lochness.alphabetagency.com</td>
<td>98.11.23.86</td>
</tr>
<tr>
<td>abcal1</td>
<td>abc:access:godzilla.alphabetagency.com</td>
<td>98.11.11.41</td>
</tr>
<tr>
<td>abca2</td>
<td>abc:access:yeti.alphabetagency.com</td>
<td>98.11.11.42</td>
</tr>
</tbody>
</table>
lonadm:hjm111MCGLkg2
MORPHY.EDU afsdb.lib.morphy.edu
<table>
<thead>
<tr>
<th>PerlSetVar</th>
<th>lonAdmEMail</th>
<th><a href="mailto:harris41@spock.lite.msu.edu">harris41@spock.lite.msu.edu</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>PerlSetVar</td>
<td>lonHostID</td>
<td>morphyl1</td>
</tr>
<tr>
<td>PerlSetVar</td>
<td>lonRole</td>
<td>library</td>
</tr>
<tr>
<td>PerlSetVar</td>
<td>lonLoadLim</td>
<td>2.00</td>
</tr>
<tr>
<td>PerlSetVar</td>
<td>lonExpire</td>
<td>86400</td>
</tr>
<tr>
<td>PerlSetVar</td>
<td>lonReceipt</td>
<td>lkj32kjlppqkkm</td>
</tr>
<tr>
<td>PerlSetVar</td>
<td>lonDefDomain</td>
<td>msu</td>
</tr>
</tbody>
</table>
# loncapa_apache.conf -- Apache HTTP LON-CAPA configuration file
#
#$Id: loncapa_apache.conf,v 1.3 2003/02/03 18:03:51 harris41 Exp $
#
#
# LON-CAPA Section (extensions to httpd.conf daemon configuration)
# ======= DocumentRoot ========= DocumentRoot "/home/httpd/html"
# ======= User ========= User www
# wyś Group www
# Shared Object Modules ========= LoadModule perl_module modules/libperl.so
# Addison mod_perl.c
# Miscellaneous ========= ServerAdmin korte@lite.msu.edu
# Addison ExtendedStatus On
#
# LON-CAPA Section (extensions to srm.conf name space servicing)
# # Alias /prtspool/ /home/httpd/prtspool/
# ScriptAlias /cgi-bin/ "/home/httpd/cgi-bin/"
# # Directories ========= PerlTransHandler Apache::lontrans
# # Access Handlers ========= <LocationMatch "^/res.*">
# PerlAccessHandler Apache::lonacc
# PerlHeaderParserHandler Apache::lonrep
# ErrorDocument 403 /adm/login
# ErrorDocument 404 /adm/notfound.html
# ErrorDocument 406 /adm/roles
# ErrorDocument 500 /adm/errorhandler
</LocationMatch>

</LocationMatch>

</LocationMatch>

</LocationMatch>

</LocationMatch>

PerlAccessHandler Apache::lontokacc
</LocationMatch>

PerlAccessHandler Apache::lonuploadedacc
ErrorDocument 404 /adm/notfound.html
ErrorDocument 500 /adm/errorhandler
</LocationMatch>

PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonsyllabus
ErrorDocument 404 /adm/notfound.html
ErrorDocument 500 /adm/errorhandler
</LocationMatch>

<LocationMatch "^/adm/.*aboutme">
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonaboutme
ErrorDocument 404 /adm/notfound.html
ErrorDocument 500 /adm/errorhandler
</LocationMatch>

<LocationMatch "^/priv.*">
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonconstruct
ErrorDocument 403 /adm/login
ErrorDocument 404 /adm/notfound.html
ErrorDocument 406 /adm/unauthorized.html
ErrorDocument 500 /adm/errorhandler
AllowOverride None
</LocationMatch>

<LocationMatch "^/raw.*">
PerlAccessHandler Apache::lonracc
</LocationMatch>

<LocationMatch "^/~.*">
PerlAccessHandler Apache::lonracc
ErrorDocument 403 /adm/login
ErrorDocument 404 /adm/notfound.html
ErrorDocument 406 /adm/unauthorized.html
ErrorDocument 500 /adm/errorhandler
</LocationMatch>

<LocationMatch "^/~.*\.sequence$">
SetHandler perl-script
PerlHandler Apache::lonratedt
</LocationMatch>

<LocationMatch "^/~.*\.page$">
SetHandler perl-script
PerlHandler Apache::lonratedt
</LocationMatch>

<LocationMatch "^/~.*\ratserver$">
SetHandler perl-script
PerlHandler Apache::lonratsrv
</LocationMatch>

<Location /adm/ratparms>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonratparms
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

# -------------------------------------------------------- RAT

<LocationMatch "^/~.*\.sequence$">
SetHandler perl-script
PerlHandler Apache::lonratedt
</LocationMatch>

<LocationMatch "^/~.*\.page$">
SetHandler perl-script
PerlHandler Apache::lonratedt
</LocationMatch>

<LocationMatch "^/~.*\ratserver$">
SetHandler perl-script
PerlHandler Apache::lonratsrv
</LocationMatch>

<Location /adm/ratparms>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonratparms
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

# -------------------------------------------------------- Resource Space Content Handlers

<LocationMatch "^/res.*$/">
SetHandler perl-script
PerlHandler Apache::lonindexer
</LocationMatch>
<LocationMatch "^/(res|\~).\*\.tex$">
SetHandler perl−script
PerlHandler Apache::lontex
</LocationMatch>

<LocationMatch "^/res/.*\.page$>
SetHandler perl−script
PerlHandler Apache::lonpage
</LocationMatch>

<LocationMatch "^/res/.*\.sequence$>
SetHandler perl−script
PerlHandler Apache::lonsequence
</LocationMatch>

<LocationMatch "^/(res|\~).\*\.meta$>
SetHandler perl−script
PerlHandler Apache::lonmeta
</LocationMatch>

<LocationMatch "^/(res|\~).\.(xml|html|htm|xhtml|xhtm)$">
SetHandler perl−script
PerlHandler Apache::lonxml
</LocationMatch>

<LocationMatch "^/(res|\~).\.(problem|exam|quiz|assess|survey|form|library)$">
SetHandler perl−script
PerlHandler Apache::lonhomework
</LocationMatch>

<LocationMatch "^/adm/wrapper/">
PerlAccessHandler Apache::lonacc
SetHandler perl−script
PerlHandler Apache::lonwrapper
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</LocationMatch>

# --------------------------------------------------------------- Admin Programs

<Location /adm/statistics>
PerlAccessHandler Apache::lonacc
SetHandler perl−script
PerlHandler Apache::lonstatistics
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/roles>
PerlAccessHandler Apache::lonacc
SetHandler perl−script
PerlHandler Apache::lonroles
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/login>
SetHandler perl−script
PerlHandler Apache::lonlogin
</Location>

<Location /adm/logout>
PerlAccessHandler Apache::lonacc
SetHandler perl−script
PerlHandler Apache::lonlogout
ErrorDocument 403 /adm/login
<Location>
</Location>

<Location /adm/authenticate>
SetHandler perl-script
PerlHandler Apache::lonauth
</Location>

<Location /adm/annotations>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::admannotations
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/bookmarks>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::admbookmarks
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/flip>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonpageflip
ErrorDocument 406 /adm/roles
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/ambiguous>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonambiguous
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/email>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonmsg
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/parmset>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonparmset
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/grades>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::grades
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>
<Location /adm/createcourse>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::loncreatecourse
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/createuser>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::loncreateuser
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/publish>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonpublisher
ErrorDocument 403 /adm/login
ErrorDocument 404 /adm/notfound.html
ErrorDocument 406 /adm/unauthorized.html
ErrorDocument 500 /adm/errorhandler
</Location>

<LocationMatch "^/~.*/$">
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonpubdir
ErrorDocument 403 /adm/login
ErrorDocument 404 /adm/notfound.html
ErrorDocument 406 /adm/unauthorized.html
ErrorDocument 500 /adm/errorhandler
</LocationMatch>

<Location /adm/pubdir>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonpubdir
ErrorDocument 403 /adm/login
ErrorDocument 404 /adm/notfound.html
ErrorDocument 406 /adm/unauthorized.html
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/retrieve>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonretrieve
ErrorDocument 403 /adm/login
ErrorDocument 404 /adm/notfound.html
ErrorDocument 406 /adm/unauthorized.html
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/cfile>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::loncfile
ErrorDocument 403 /adm/login
ErrorDocument 404 /adm/notfound.html
ErrorDocument 406 /adm/unauthorized.html
ErrorDocument 500 /adm/errorhandler
</Location>
<Location>/adm/diff</Location>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::londiff
ErrorDocument 403 /adm/login
ErrorDocument 404 /adm/notfound.html
ErrorDocument 406 /adm/unauthorized.html
ErrorDocument 500 /adm/errorhandler
</Location>

<Location>/adm/upload</Location>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonupload
ErrorDocument 403 /adm/login
ErrorDocument 404 /adm/notfound.html
ErrorDocument 406 /adm/unauthorized.html
ErrorDocument 500 /adm/errorhandler
</Location>

<Location>/adm/assesscalc</Location>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonspreadsheet
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>

<Location>/adm/studentcalc</Location>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonspreadsheet
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>

<Location>/adm/classcalc</Location>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonspreadsheet
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>

<Location>/adm/dropadd</Location>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::londropadd
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>

<Location>/adm/printout</Location>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonprintout
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>
<Location /adm/feedback>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonfeedback
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/coursedocs>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::londocs
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/announcements>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonannounce
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/chat>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonchat
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/chatfetch>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonchatfetch
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/evaluate>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonevaluate
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/preferences>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonpreferences
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/assignments>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
PerlHandler Apache::lonassignments
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/communicate>
PerlAccessHandler Apache::lonacc
SetHandler perl-script
</Location>
PerlHandler Apache::loncommunicate
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/searchcat>
PerlAccessHandler Apache::lonacc
SetHandler perl−script
PerlHandler Apache::lonsearchcat
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/navmaps>
PerlAccessHandler Apache::lonacc
SetHandler perl−script
PerlHandler Apache::lonnavmaps
ErrorDocument 403 /adm/login
ErrorDocument 406 /adm/roles
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/groupsort>
PerlAccessHandler Apache::lonacc
SetHandler perl−script
PerlHandler Apache::groupsort
ErrorDocument 403 /adm/login
ErrorDocument 500 /adm/errorhandler
</Location>

<Location /adm/errorhandler>
SetHandler perl−script
PerlHandler Apache::lonerrorhandler
</Location>

<LocationMatch "^/adm/help/.*\.hlp$">
SetHandler perl−script
PerlHandler Apache::lonhelp
</LocationMatch>

# −−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−− Backdoor Adm Tests/Programs

<Location /cgi−bin/loncron.pl>
AuthName "LON−CAPA Network Administration"
AuthType Basic
AuthUserFile /home/httpd/lonTabs/htpasswd
require user lonadm
</Location>

<Location /cgi−bin/lonversions.pl>
AuthName "LON−CAPA Network Administration"
AuthType Basic
AuthUserFile /home/httpd/lonTabs/htpasswd
require user lonadm
</Location>

<Location /cgi−bin/clusterstatus.pl>
AuthName "LON−CAPA Network Administration"
AuthType Basic
AuthUserFile /home/httpd/lonTabs/htpasswd
require user lonadm
</Location>

<Location /cgi−bin/metadata_keywords.pl>
AuthName "LON−CAPA Network Administration"
AuthType Basic
AuthUserFile /home/httpd/lonTabs/htpasswd
require user lonadm
</Location>
AuthUserFile /home/httpd/lonTabs/htpasswd
require user lonadm
</Location>

<Location /adm/test>
AuthName "LON-CAPA Network Administration"
AuthType Basic
AuthUserFile /home/httpd/lonTabs/htpasswd
require user lonadm
SetHandler perl-script
PerlAccessHandler Apache::lonacc
PerlHandler Apache::lontest
</Location>

# --------------------------------------------------------- Shutting down a child
PerlChildExitHandler Apache::lonnet::goodbye

# # LON-CAPA Section (extensions to access.conf permission configuration)
# # ============================================================== Directory Options
# # Start out with "no"
<Directory />
Options None
AllowOverride None
</Directory>

# Yes to symbolic links and server-side includes
<Directory /home/httpd/html>
Options Includes FollowSymLinks
AllowOverride None
order allow,deny
allow from all
</Directory>

# If it is in cgi-bin, then it can be executed as a CGI script.
<Directory /home/httpd/cgi-bin>
AllowOverride None
Options ExecCGI
</Directory>

# ============================================================== Access Handlers
# ============================================================== Allow server-status reports
<Location /server-status>
SetHandler server-status
AuthName "LON-CAPA Network Administration"
AuthType Basic
AuthUserFile /home/httpd/lonTabs/htpasswd
require user lonadm
</Location>

# ============================================================== Allow LON-CAPA "low-level" connection status reports
<Location /lon-status>
AuthName "LON-CAPA Network Administration"
AuthType Basic
AuthUserFile /home/httpd/lonTabs/htpasswd
require user lonadm
</Location>

# ============================================================== Allow access to local system documentation from localhost
Alias /doc /usr/doc
<Directory /usr/doc>
order deny,allow
deny from all
allow from localhost
Options Indexes FollowSymLinks
</Directory>

# ******** THESE "SHOULD" NEVER BE ALTERED BY THE USER **********************
# ============================================================================

PerlSetVar lonIDsDir /home/httpd/lonIDs
PerlSetVar lonTabDir /home/httpd/lonTabs
PerlSetVar lonUsersDir /home/httpd/lonUsers
PerlSetVar lonIconsURL /adm/lonIcons
PerlSetVar londPort 5663
PerlSetVar lonSysEMail korte@lite.msu.edu
PerlSetVar lonDaemons /home/httpd/perl
PerlSetVar lonSockDir /home/httpd/sockets
PerlSetVar lonDocRoot /home/httpd/html
PerlSetVar lonIncludes /home/httpd/html/res/adm/includes

# ============================================================================

PerlSetVar lonSqlAccess localhostkey

# ============================================================================

Include conf/loncapa.conf

# ============================================================================

PerlRequire conf/startup.pl
PerlFreshRestart On
# Undisciplined Local Clock. This is a fake driver intended for backup
# and when no outside source of synchronized time is available. The
# default stratum is usually 3, but in this case we elect to use stratum
# 0. Since the server line does not have the prefer keyword, this driver
# is never used for synchronization, unless no other other
# synchronization source is available. In case the local host is
# controlled by some external source, such as an external oscillator or
# another protocol, the prefer keyword would cause the local host to
# disregard all other synchronization sources, unless the kernel
# modifications are in use and declare an unsynchronized condition.
# server ntp.morphy.edu
#fudge 127.127.1.0 stratum 10
#
# Drift file. Put this in a directory which the daemon can write to.
# No symbolic links allowed, either, since the daemon updates the file
# by creating a temporary in the same directory and then rename()‘ing
# it to the file.
# driftfile /etc/ntp/drift
multicastclient
# listen on default 224.0.1.1
broadcastdelay 0.008
#
# Authentication delay. If you use, or plan to use someday, the
# authentication facility you should make the programs in the auth_stuff
# directory and figure out what this number should be on your machine.
# authenticate no
#
# Keys file. If you want to diddle your server at run time, make a
# keys file (mode 600 for sure) and define the key number to be
# used for making requests.
# PLEASE DO NOT USE THE DEFAULT VALUES HERE. Pick your own, or remote
# systems might be able to reset your clock at will.
#keys
#trustedkey 65535
#requestkey 65535
#controlkey 65535
<table>
<thead>
<tr>
<th>Service</th>
<th>Type</th>
<th>Module</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>auth</td>
<td>required</td>
<td>/lib/security/pam_pwdb.so</td>
<td>shadow nullok</td>
</tr>
<tr>
<td>auth</td>
<td>required</td>
<td>/lib/security/pam_nologin.so</td>
<td></td>
</tr>
<tr>
<td>account</td>
<td>required</td>
<td>/lib/security/pam_pwdb.so</td>
<td></td>
</tr>
</tbody>
</table>
# Global parameters
[global]
  workgroup = LONCAPA_msu
  netbios name = msua3
  server string = Samba Server
  encrypt passwords = Yes
  log file = /var/log/samba/log.%m
  max log size = 0
  socket options = TCP_NODELAY SO_RCVBUF=8192 SO_SNDBUF=8192
  dns proxy = No

[homes]
  comment = Home Directories
  writeable = Yes
  browseable = Yes
  create mode = 0664
  directory mode = 0775
abca1
abca2