

Building a Self-Cleaning Oven Model

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OS X's ability to run scripts at log out can assist you in keeping a clean, consistent user environment. It is possible to create a system that will back up the current user's work when she or he logs out, delete the Home directory, and replace it with a known-working, clean copy of the User template. This documentation will lead you through the process of setting up your self-cleaning oven model.

Setting up your template

For the sake of this exercise let us assume that the account that you will want to refresh is called "Student." While it is possible to refresh multiple accounts on a single Mac, for this example we will have only one account refreshing.

1. Set up your Student account exactly the way that you want them to behave for the end user. Make sure you have assigned a printer in both OS X and Classic, you have opened all the applications, removed unnecessary folders from the user's home directory (i.e. Movies, Music, Sites) and generally cleaned up the account. It would also be a good idea to run DeLocalizer to strip out the foreign language localizations from the system; this will free up a couple hundred megabytes. (<http://www.bombich.com/software/local.html>)
2. Open the Terminal application (/Applications/Utilities/Terminal).

Now we are going to back up the existing account to create a "template" from which we will restore out account.

1. With Terminal open, type the following commands (I have annotated what each command does):

```
sudo ditto -rsrFork /Users/Student /var/root/Student
```

You will be asked for your admin password. This command backs up the contents of the Student home directory to an area reserved for use by the root user.

```
sudo chown -R root:admin /var/root/Student
```

This command gives ownership of the directory to root and the group admin.
2. Quit the Terminal.

At this point we have a template backed up into a "safe" place on the system where users cannot make any modifications.

Setting Up Your Refresh Script

In order to refresh the Student account when a user logs out, we need to use a shell script. Below is an example script that I use on my systems:

```

#!/bin/csh
# The line above needs to be present so the system knows it is a shell script

##### refresh-home-directories-save-tmp #####
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# Adapted from work by Mike Bombich and Frank C
#####

### Description ###
#
# The purpose of this script is to move the home directory
# of the user that was just logged in to a temporary location,
# then copy the user template to the Users directory to provide a
# fresh, consistent interface for the next user.
#
# If a user that just logged out realizes that they need
# something that was saved in the home directory, they can get to
# it by selecting "Go to Folder..." from the Finder's "Go" menu,
# then typing "/tmp".
#
# Note that /tmp is cleared on Restarts and at 3 am when the daily cron runs
#

# Loginwindow passes the username to the script via the variable $1
if ( $1 == 'Student' ) then

# First, create a timestamp
set time = `date +%m-%d-%y_%H.%M.%S`

# Move the home directory
mkdir -m 755 "/private/tmp/prevuser.$time"
mv /Users/First "/private/tmp/prevuser.$time"

# Then unlock the files
/usr/bin/chflags -R nouchg /Users/Student/*
/usr/bin/chflags -R nouchg /Users/Student/.Trash/*
/usr/bin/chflags -R nouchg /Users/Student/.??*

# Delete all of the files
/bin/rm -R /Users/Student/*
/bin/rm -R /Users/Student/.??*

# Re-create the directory and set up the privs
/bin/mkdir /Users/Student
/usr/sbin/chown student:staff /Users/Student
/bin/chmod 755 /Users/Student

# Copy a clean version of the template to the home directory
/usr/bin/ditto -rsrcFork /private/var/root/Student /Users/Student
/usr/sbin/chown -R student:staff /Users/Student/*
/usr/sbin/chown -R student:staff /Users/Student/.??*

# Delete the existing Trash
/bin/rm -R /Users/Student/.Trash/

# Make sure the Trash directory exists and set privs for trash and dot files
/bin/mkdir /Users/Student/.Trash
/usr/sbin/chown -R student:staff /Users/Student/.??*
/bin/chmod -R 700 /Users/Student/.??*
endif
exit 0

```

This script is also available on the Tech Server (/Techs/Josh Burkner/Management Scripts/logout-save-tmp-first.sh).

- If you want to adapt this script for your use, copy it to the Mac on which you are building your master image while logged in as Admin.
- Open TextEdit and change the “New Document Attributes” preferences to **Text**.
- Open the script in Text Edit; you may have to drag-and-drop the icon onto TextEdit’s icon to force it to open in TextEdit.
- Make any changes you need to make to the script and save it, making sure it is a text-only document, not RTF (this example script is already saved as text-only).
- Issue the following commands in the Terminal application:

```
sudo mkdir /var/root/Scripts
```

This will make a directory in the root’s home directory called “Scripts.”

```
sudo ditto /path/to/script/logout-refresh-tmp-student.sh /var/root/Scripts/logout-refresh-tmp-student.sh
```

This will copy the script to the appropriate location in the root’s home directory. If the script is on the desktop, the path to the script might be

/Users/Admin/Desktop/logout-refresh-tmp-student.sh

You can drag and drop the script into the Terminal to have the path automatically entered for you.

```
sudo chown -R root:admin /var/root/Scripts/logout-refresh-tmp-student.sh
```

This will assign the proper ownership to the script.

```
sudo chmod u+x /var/root/Scripts/logout-refresh-tmp-student.sh
```

This makes the script executable.

With our Scripts directory created and a script in place, we are now ready to tell the system to use the script at logout.

1. Download Mike Bombich’s LoginWindow Manager (<http://www.bombich.com/software/lwm.html>)
2. Place this application somewhere where access is restricted (I suggest creating an Applications directory in the Admin’s Home directory and putting it here).
3. Open the application; you will be asked to authenticate with an admin password.
4. Click the check box next to “Run this shell script on logout.”
5. Provide the path to the script: `/var/root/Scripts/logout-refresh-tmp-student.sh`
6. Click the Apply button; LoginWindow Manager will activate the script.

Now when the Student user logs out her or his home directory will be time stamped; backed up into the /tmp directory; erased; and replaced with a copy of the user template stored in /var/root/Student.

Should a student realize that she or he saved something to the desktop, it is possible to log in to the Mac and retrieve the work from the /tmp directory.

1. Log into the Mac as a Student and go to the **Go** menu and select **Go to Folder...**

In the “Go to folder” field type: **/tmp**

2. Inside the /tmp folder you will see time stamped folders; open the folder with the appropriate time, then open the Desktop folder; you will find the work that was inadvertently saved on the desktop within this folder.
3. Log out.

Updating the Student Account

Now that you have a logout script in place the Student home directory will be refreshed at every logout. Should you need to modify a setting or configuration in the Student account, you will need to deactivate the logout script so it does not replace the changed account with the template.

1. Log in as an Admin and open LoginWindow Manager; you will be asked to authenticate.
2. Uncheck the box next to "Run this shell script on logout."
3. Click the Apply button.

You can then logout of the Admin account and login to the Student account. Make the changes you wish to make. When you are finished with your configurations, go to the Apple Menu: Recent Items and clear the menu. You are now ready to replace the template.

1. Log in as an Admin and open the Terminal application.
2. Issue the following commands in the Terminal application:

```
sudo rm -R /var/root/Student
```

This will remove the template that we have stored in the root's home directory.

```
sudo ditto -rsrsrcFork /Users/Student /var/root/Student
```

This command backs up the contents of the Student folder to an area reserved for use by the root user.

```
sudo chown -R root:admin /var/root/Student
```

This assigns the proper ownership to our template.

3. Open LoginWindow Manager and authenticate.
4. Click on the check box next to "Run this shell script on logout."
5. Provide the path to the script: /var/root/Scripts/logout-refresh-tmp-student.sh
6. Click the Apply button; LoginWindow Manager will activate the script.

You now have an updated template that has the changes you made to it ready to be used to replace the Student home directory.