# Athena 7.2 Release:
## Changes that Affect General Users and Program Developers

Kevin Cunningham
Project Athena User Services

25 January 1991
Version 1

## REVISION HISTORY

Version 1 (25 Jan 91, Kevin Cunningham): Original Draft. Thanks to Richard Basch, Paul Boutin, Bill Cattey, Craig Fields, Carla Fermann, Jonathan Kamens, John Kohl, Jerry Larivee, Anne LaVin, Henry Mensch, Ezzard Peibasch, Ezra Peisach, Peter Ralston, Peter Roden, Mark Rosenstein, Anne Salemme, Naomi Schmidt, Ralph Swick, and Chris Van Haren for reviews.

# Table of Contents

# 1    Introduction

This document describes the user-visible changes of general interest in Athena's 7.2 Release:

- The workstation login has been improved significantly in speed and memory use, and the initial login window has more options, including programs you can run without having to login to Athena.

- The Athena Dashboard screen management program, **dash**, is now available in the release. "Dash" allows you to launch popular Athena programs from a menu, get brief help about each program, and customize your screen.

- Several new online information resources are now available, including an electronic "ombudsman" (Lucy), online access to various library card catalogues, and an online map of MIT services (**xinfo**).

- Several minor changes have been made in printing.

- A revised version of **xdvi**, the previewer you can use to view processed LaTeX documents, is now in the standard release. Many improvements have been made to EZ and related programs (notably the EOS suite, which is now known as the NEOS suite).

- Several minor changes have been made relating to Mail and Zephyr.

Each of these changes is described in the following sections.

Application developers may also be interested in knowing that Muse, a runtime environment that executes multimedia applications using text-based script files, is now available directly on Athena. Information will be forthcoming in OLH.

If you are a systems hacker or someone else who would like to know the technical details of the changes made in Release 7.2, you can look at the 7.2 release document written by Athena's System Development Group. This document contains an exhaustive list of the technical changes made to the Athena environment as part of Release 7.2, including lists of bug fixes and of changed system files. It can be found in the info locker as /mit/info/Release.dir/Release72.system.PS. To view this file, enter:

```
athena% attach info
athena% viewscribe /mit/info/Release.dir/Release72.system.PS &
```

# 2 Login Improved

When you login to Athena directly from a workstation, you will notice significant improvements in the login process, in two different areas:

• The login process has been made much more efficient. Login times have been reduced by over 30% from login times in the previous Athena Release, and the memory overhead (swap space) associated with login processes has been reduced by about 1 Megabyte.

• The login screens have been significantly revised and new options added, including a special "fast login" option and several information-oriented programs (help, xcluster, techinfo, and others) that you can run without actually logging in.

## 2.1  Login Speed and Memory Use Improved

Significant improvements in login speed and memory use have resulted from several related improvements:

• The login window now immediately appears when you Press Any Key to Start, so you do not have to wait before you can enter your username and password. The workstation is now "activated" all the time, rather than waiting for you to log in -- the workstation is deactivated for only a few seconds every five minutes when noone is logged in. This means, for example, that you will not have to wait for the X Window System to start, since X is now set up to run on the workstation all the time. (This is the reverse of the old "toehold" paradigm, in which you always had to wait for the machine to fully activate, including starting up X, before you were presented with the login screen.)

• All of the workstation login programs (including the system xsession shell script) have been significantly revised to make the login process more efficient. Some of these revisions have been oriented towards improved program logic (e.g., one program that formerly spawned a subprocess but kept running now replaces itself with that subprocess, reducing memory use). Other revisions incorporate experience about process timing (e.g., certain specific delays between launching two processes actually help both processes come to completion more quickly than if they were started at the same time, since they are not competing for system resources simultaneously).

• The console window has been re-implemented so that it uses less swap space.

The overall effect of these changes is to speed up login times by over 30% (compared with Release 7.1), and to free up about 1 Megabyte of swap space formerly tied up by login-associated processes that sat idle for your whole login session.

(Another login-related memory saving comes from the new "Logout" button -- it is now generated by the **dash** program rather than the **xlogout** program and takes less than half as much memory to run. See the section on **dash** for more information).

## 2.2   New Login Screen with More Options

The login windows have been changed slightly to show both the machine name and the current time. But the main improvement in the main login screen has been the addition of many new options -- there is now a special quick-login option, and you can now run certain information-oriented programs (**help**, **xcluster**, **techinfo**, and others) from a workstation without having to login at all.

There are now three option buttons rather than two.

● "Login Options" displays a menu of possible session styles, including the new "Terminal-style session" choice that will log you in quickly with just one xterm window (the style you select is marked with a check):

```
-----------------------------------------------------------------
Selection                    Resulting Session Type
-----------------------------------------------------------------
Your usual login session     Standard Athena login, using your
                             customizations ("dotfiles")

Ignore your customizations   Standard Athena login, ignoring your
                             customizations ("dotfiles")

Terminal-style session       Quick no-frills Athena session, using
                             only your tty-oriented customizations,
                             with one xterm and X windows, but no
                             window manager

Specify special login        Run a shell script (you specify the
                             pathname of the executable script)
                             and bypass the standard xsession script

Start over                   Return check mark on this menu to the
                             default choice (the first choice above)
                             and clear anything already entered
                             for username and password
-----------------------------------------------------------------
```

• "Other Options" displays a menu of runnable options, divided into Informational programs (as might be useful to the MIT and Athena communities at large) and "Other tasks" (oriented more toward special users such as Athena Operations staff). Note that none of the informational programs require that you login first -- you can run these even if you don't have an Athena account.

The following table lists each Other Option and the corresponding Athena program that gets run when you select that option:

```
---------------------------------------------------------------
Option                              Athena Program
---------------------------------------------------------------
Athena On-Line Help                 help -tty
Map/Status of Athena Clusters       xcluster
MIT On-Line Information             techinfo
Library Access                      add library; library
MIT Campus Map                      xinfo
Display Workstation Configuration   /etc/athena/login/machine
---------------------------------------------------------------
Login to MITVMA                     tn3270 mitvma.mit.edu
Update MIT Mailhub Info             attach moira;
                                      /mit/moria/namespace
"Lucy" Advisor                      (see "Information Resources")
Display Console Window              show_console
Shutdown Window System             (no direct analogue)
---------------------------------------------------------------
```

• "Register for an Account", as always, immediately calls up the register program to let new users select a username and password and so activate an Athena account. (Note one change to the register program: it will request confirmation on user names, to prevent typos from becoming destiny).

## 2.3   Configuring the Login Elements

The console window has been re-implemented so that it not only uses less swap space, but is now entirely configurable (you configure it for a session using your ˜/.Xresources file). In addition, private workstation owners can configure the "Other Options" menu (these customizations should be done using a file called /etc/athena/login/Xlogin.local, *not* by revising the xlogin resources.) For more information, see the manual pages about the console window:

```
athena% man 8 console
athena% man config_console
```

# 3 The Athena Dashboard: dash

The Athena screen-management program, **dash**, is now available in the standard release. The "Athena Dashboard" incorporates three major functionalities into one efficient program:

● a menu-based application launcher that helps you find and start many of the principal Athena programs

● a quick-reference summary of each of its applications, effectively serving as a quick reference card for Athena's most commonly used programs

● a configurable "desktop"-oriented management tool, providing configurable menus and efficient applications such as clocks

To try **dash**, just type the following command at the athena% prompt:

**dash &**

You could also include the above command in your ˜/.startup.X file to have dash come up automatically in each session. (Actually, a special form of **dash** is also running as part of the standard session startup, producing the "Logout" pop-up button.)

Documents on how to work with and configure **dash** are forthcoming. You may also see the man page on **dash** (type **man dash** at your athena% prompt).

# 4 Information Resources

## 4.1 Lucy Community Advisor Service (Coming Soon)

The new "Lucy" service (not yet available, but coming soon!) is an electronic ombudsman/advisor, ready to receive questions of all kinds from the community at large. Any member of the MIT community may ask a question on-line, ranging from "I'm new to the area. Where is a good, moderately priced restaurant suitable for an evening out?" to "I recently stole a small amount of cash from a fellow staff member. No one suspects but I'm feeling horribly guilty. What should I do?"

You can feel free to ask any kind of question or express any problem to Lucy, but Lucy will be especially valuable for difficult issues that require the guarantee of anonymity (e.g., issues of harassment, crime, etc.) In this sense, Lucy complements other counselling/advisory resources that can help MIT Community members address difficult problems.

To communicate with Lucy (e.g., ask a question), you run a program either from the pre-login menu (in this case, you won't need an Athena account), or at your athena% prompt (in this case, you've already logged in).

Communications will be anonymous, unless you choose otherwise. Even if you log in before sending the question, your username will be removed from the message before it is sent to Lucy, so that it will be sent anonymously (of course, you *can* explicitly provide your name or other identifier in your message, if you so desire).

A subset of Lucy questions and answers will be made available on-line for the community to browse through (all such messages will be made available only with the sender's permission, and with all potential identifiers removed). If you submit a question and include your name, your question may be answered personally; if you submit a question without any identification, you will need to read the question/answer browser to find your answer.

NOTE: Lucy is still being tested, so please do not submit questions yet! Athena will publicize when Lucy is ready to take questions.

·

## 4.2 OnLine Library Catalogues

A menu-oriented browser for exploring library resources on and off campus is now available in the library locker. To try it, just enter the following commands at your prompt:

```
athena% add library; library
```

This connects you to the library server, which presents you with a menu of online library catalogs (you can also get to this service from the "Other Options" menu of the Athena Login window -- see the section on **Login Improved**). The current menu options include the following:

```
1 Barton  (MIT)
2 BU
3 Hollis  (Harvard)
4 Melvyl  (Berkeley)
5 Boston  Library Consortium (via Colorado)
```

More library resources will be accessible soon, including an On Line Reference Librarian and electronic forms for interlibrary loan.

## 4.3 Campus Map: xinfo

A new map-oriented Campus-wide service program, **xinfo**, is now available. This program displays a map of MIT and a menu of topics (such as Buildings, Departments, Libraries, Student Center, Athletics, etc.) to help you find what you need at MIT. To call this program, just enter **xinfo** at the athena% prompt, or select the "MIT Campus Map" option from the login window before you login to Athena.

## 4.4 Techinfo Directly Available

You can now get to TechInfo, MIT's online information browser, directly from athena, without having to attach a locker yourself. To call this program, just enter **techinfo** at the athena% prompt, or select the "MIT On-Line Information" option from the login window before you login to Athena.

# 5 Printing

There are several user-visible release changes related to printing:

- **lpr** now looks for a LPROPT environment variable and, if it is set, processes it before any arguments on the command line, thereby allowing for user-definable defaults. For example, if you were working on Athena for a project to be billed to a department account number, you could put the following command in your ~/.environment file, or issue it from the athena% prompt (before issuing a call to **lpr**):

    **setenv LPROPT "-a 99999 -Phero"**

- Permission to print on a particular printer is now configurable (by authorized people) via access control lists. This means that private cluster managers (and managers of other private printers) can specify who is allowed to print out on their printers. Athena's public printers will still be available to everyone with an Athena account.

- The options to the **lpquota** command have been changed to match the options to **lpr** and **lpq**. Specifically, The **lpquota** option -g has been changed to -a (to match what -a means to **lpr**), while the old -a has been changed to -k.

- To find out the price per page charged by a particular printer, use the -I option to the **lpq** command when you print out a file. (There is still no way to determine how much a printer will charge for a particular job without sending the file, because the system cannot always determine exactly how many pages will be printed).

# 6 Text Processing

## 6.1   New Version of xdvi for Tex/LaTeX Previewing

Athena has adopted a new version of xdvi, the previewer for files in the dvi format (e.g., files generated by TeX). The new version has many new features, including the ability to size the display, and a convenient set of useful buttons on the right side of the window. The following table lists some useful xdvi commands (see also man xdvi):

```
-------------------------------------------------------------------
  xdvi Command                                 Keystroke   Button
-------------------------------------------------------------------
Move forward num pages (default: 1)            [num]n
  Move forward 1 page                          n           Next
  Move forward 5 pages                         5n          Page+5
  Move forward 10 pages                        10n         Page+10

Move backward num pages (default:1)            [num]p
  Move backward 1 page                         p           Prev
  Move backward 5 pages                        5p          Page-5
  Move backward 10 pages                       10p         Page-10

Move to page num (default: last page)          [num]g

Set current page to be considered page num     [num]P
(default, set current page to be page 1)

Pan across a page
  Pan up (scroll text down)                    u
  Pan down (scroll text up)                    d
  Pan left (scroll text to right)              l
  Pan right (scroll text to left)              r
  Move text under cursor into center of display c
  Pan to "home" (normally upper left-hand corner)  ^

Redisplay current page                         CTRL-L
Reread the entire dvi file and redisplay page  R

Change "shrink factor" (number of times to     [num]s
reduce text from full-size) to num (initially
uses smallest factor that makes entire page fit)
  Show at full size                            1s          Shrink1
  Show at half-size                            2s          Shrink2
  Show at third-size                           3s          Shrink3
  Show at quarter-size                         4s          Shrink4

Set density factor for shrinking bitmaps (between [num]S
0 and 100; higher number produces lighter image)

Hide/show command button panel                 x

Quit xdvi                                       q           Quit
-------------------------------------------------------------------
```

## 6.2  EZ and Andrew Changes

EZ is now available on the PS/2 as well as the RT and the Vax. MIT is up to CMU patch level 6, which means that many Andrew and EZ bugs have been fixed. Most notably, TABs you see on the screen will now match what you see on the page.

**EZ Changes:**

• **Plainer** and **Plainest** now work over any arbitrary selection area (they used to require you to enter <ESC>s to set the bounds of the selection before they would work correctly).

• Footnotes now print in the same format that all footnotes do (they used to appear with the formatting of the region inside of which they appeared).

• The **Set Printer** command on the **File** menu card has been replaced by **Printer Setup**, which brings up a dialog box that lets you set the printer, whether to print the table of contents, whether to automatically enumerate the contents, whether to print footnotes at the end of documents, and whether to swap right and left headers on even pages.

• A new EZ object, a time-stamp, remembers the date of the last write of the file and prints it (use the new **Insert time-stamp** menu option).

• A new EZ object, a header/footer template, lets you set headers and footers for a document without resorting to troff (use the new **Insert header/footer** menu option).

• **Enumerate** and **Insert Bullets** now insert a TAB space as whitespace instead of a SPACE. **Denumerate** and **Remove Bullets** have been revised to remove either kind of whitespace character. Also, all four of these commands now only affect paragraphs at the same indent level as the first paragraph manipulated, not nested paragraphs. This makes it possible to produce nested itemization schemes, such as:

1. Thing 1

    1. Subthing 1

    2. Subthing 2

2. Thing 2

• EZ now recognizes **M-x** (also known as <ESC>x), which lets you call editor commands by their long names (as in GNU Emacs).

- **M-?** (also know as **<ESC>?**) now prompts for a key to describe (for a complete list of supported commands, enter **M-x deskey-describe-bound-keys**).

- Checkpoint filenames are now **#<userid><path>#.CKP** where userid is the person's user id number and path is the full path name of the file with '@' substituted for '/' in the name. For example, the EZ file **/site/wdc/.ezinit** would have a checkpoint file named **/usr/tmp/#11306@site@wdc@.ezinit#.CKP**.

## EOS/Grade Changes:

- The general name for the suite of turnin/pickup software has been changed from EOS to NEOS (for Networked Educational OnLine Software).

- The improved **turnin/pickup/collect/return** programs (including those not based on Andrew software) are now on packs -- you no longer need to attach the **eos** locker to use these programs, you can just call them from the **athena%** prompt directly.

- There have been some bug fixes (NEOS turnin of a file no longer deletes the file; an obscure bug where eos would fail silently has been fixed; clicking in the list of papers after deleting a Display window no longer core dumps)

- A new menu command, **View in BIG Font**, changes the display of a file without modifying the actual content. Another new menu command, **View in Default font**, undoes the effect of **View in BIG Font**.

- The **Change Course** command gives completion help when selecting course, and verifies that the course exists. If the NEOS server won't allow write access, some read-only functions are now supported.

- The **Display** command no longer pops up a new window -- instead, it uses the main editor window. Also, its preference option **DisplayMany** is no longer supported.

- The Turnin and Pickup dialogue windows now position themselves instead of requiring a user to click them to place them.

## Other Andrew fixes:

- **eq**: the core dump problem for equations containing a zilch has been fixed.

- **ez2ascii**: now converts **verbatim** regions (no line wrap), **inputoutput** and **syntaxexample** regions (leftindent and no line wrap), and **caption** regions (center).

- **scribetext** (scribe-to-EZ converter): no longer aborts if you didn't have the magic ANDREWDIR environment variable set; also, prints out line number of failure. Now supports Scribe environments **Itemize**, **Blankspace**, **Label**, **Ref**, **Pageref**, and

Tsymbol. Provides limited support for Scribe environments Define (ignores the contents of the definition rather than choking), Newpage (works only if the scribe text appears with an argument, such as newpage() or newpage(4)).

- psinset: now uses given print size to attempt to crop postscript into reasonable size.

- zip (note that you must add the andrew locker to use zip): uses revised defaults for screen display that more obviously show how big the picture will be when printed; help page includes better description of print size issues; de-coupled constrain and show grid operations so that users can constrain their drawing without waiting for the grid to draw, or can see the grid marks without being forced to line up on them; enabled grid double/halve to work when constrain is enabled, even if grid is hidden. New Set Print Size command sets the size the zip object will print.

# 7 Communicating with Other Users

Several changes related to electronic mail and Zephyr are of interest:

- If you incorporate your mail using mh or xmh while you are logged in with a temporary home directory (i.e., you could not attach your home directory on login), the mail will be incorporated successfully, but will not be deleted from the post office (usually the mail is deleted once you successfully incorporate it). This allows you to re-incorporate the mail when you are able to login successfully. Note that this is true *only* if you use mh or xmh command (e.g., inc) -- if you use other mail programs, such as rmail in Emacs, the mail will be deleted from the post office when you incorporate it.

- Zephyr now limits you to 1 beep per zephyrgram. If you put more @beep() commands in a zephyrgram, they will be ignored.

- xzwrite, a window-oriented zephyrgram-launcher previously available from SIPB, is now available in the main Athena release. To run this program, just enter xzwrite at the athena% prompt.