Athena 7.4 Release:
Changes that Affect General Users and Program Developers

Version 1

REVISION HISTORY

Version 1 (6 July 92, Kevin Cunningham): Original Draft. This draft borrowed extensively from the System Release Notes by Craig Fields, Ezra Peisach, and Lucien Van Elsen. Thanks to these people for reviews, as well as to Richard Basch, Bill Cattey, Jeanne Cavanaugh, Gary Dryfoos, Carla Fermann, Gregory Jackson, Bruce Lewis, Andy Oakland, Mark Rosenstein, Naomi Schmidt, Laura Spagnoli, Scott Thorne, and Chris VanHaren (among others) for their contributions to this document.

Table of Contents

1   Introduction

The Summer of '92 is a time of significant change in the Athena Computing Environment. Among the events that will effect the Athena user community are the following:

- Most user home directories are being converted to a new file system ("The Great AFS Migration"). This involves a reorganization of each home directory, requires users to set access protections in a new way, and enables significantly improved recovery of lost files.

- Over a hundred new public workstations, including a significant number of color workstations, are being deployed to the clusters, replacing older models. Specifically, all of the public VS2000 machines will be replaced by DECstation 5000/133 and DECstation 5000/25 ("Maxine") workstations over the course of the summer.

- The Athena 7.4 Release introduces many behind-the-scenes changes to support the other changes (e.g., bug fixes), plus several user-visible improvements.

The most significant change by far is the migration to AFS. Every user is affected directly. If you have not done so already, please be sure to pick up and read the document AFS on Athena to see how you are affected. That document is available free of charge in clusters, at Graphic Arts Quick Copy Centers (11-004 and W20-028), and online via OLH:

```
athena%  help @afs:main_menu
```

1.1   About this Document

This **Athena 7.4 Release** document describes the changes not covered in the AFS document:

- **Login/Session Changes** -- The login screens and **quota** command are slightly revised. In conjunction with the AFS migration, the default quota is being increased to 2200 blocks. The **add** command can now be used in your ~/.environment file. The **twm** window manager now recognizes resources for working on grayscale monitors.

- **Information Resources** -- The new Student Information Services (SIS) program is available to let you access your academic records and general course information online; and several existing information commands have been improved.

- **Communicating with Other Users** -- Several minor user-visible changes related to electronic mail have been made.

- **Text Processing: Andrew and EZ** -- Many improvements have been made to EZ and related programs: now a Motif-style menubar is displayed by default across the top of the EZ window, and text in the FormatNote style is visibly distinguished from ordinary styles on screen.

- **Notes for Programmers** -- The Perl scripting language is now available in the release. A new version of Ultrix is used on DECstations.

• **Private Workstation Owners** -- Various new ways to configure private workstations are now available.

Each of these changes is described in the following sections.

1.2   For More Information

If you are a software developer or someone else who would like to know all the technical details of the changes made in Release 7.4, you can look at the **7.4 System Release Notes**. (That document includes technical details of the information listed here, as well as many other changes not covered here.) You can view that document via OLH:

```
athena%  help @rel74:system
```

2   Login and Other Session Elements

2.1   Login Screen

A number of minor enhancements have been made to xlogin program for this release:

• The Login Options and Other Options pre-login menus now display the keyboard accelerators for each item in the menu.

• Colors can now be specified (by programs that support such specification) for workstations with color display heads. On color Athena workstations, the elements of the login screen will be in red so that you can easily recognize a color workstation before you login.

• Athena messages may be displayed on the idle screen while no one is logged in. The message is read from a file in AFS so it can be changed to update important operational messages.

• The mouse will now be placed a little to the left of the center of the screen on login (location 300,300). This places it inside your xterm in the default setup so that you still have some control of the workstation in the unlikely event that the mouse is broken.

2.2   Quota

Elements of the system related to disk quota have been revised (both general improvements and changes related to the migration of lockers to AFS):

• As part of the NFS to AFS migration, the default disk quota has been raised from 1200 to 2200 kilobytes. (A kilobyte, or "block", is equal to 1024 bytes).

• The default behavior of the quota command has been revised to show you only the information you are likely to be interested in. The command now shows the disk usage and limits only on lockers that you have attached and to which you have write-access at top-level.

```
athena%  quota -v
Disk quotas for jruser (uid 1961):
Filesystem    Type  ID  usage  quota  limit  files  quota  limit
/mit/jruser   volume      787   2200   2200
```

• The quota command recognizes two options regarding attached filesystems:

```
-------------------------------------------------------------
Option              Output Shows Quota Information for:
-------------------------------------------------------------
-a                  all attached and mounted filesystems
-f filesystem       specific attached and mounted filesystem
-------------------------------------------------------------
```

• The quota command has been revised to deal better with AFS volumes. (See the document AFS on Athena for more information about quota under AFS).

2.3   General Session Changes

Several changes in 7.4 affect how an Athena session works (including startup, dialup, and other general session elements). Among the user-visible changes in these areas are the following:

• The **add** command (actually an alias that attaches a locker and adds that locker to your path) now has an optional **-v** argument to echo the status of the **attach** phase. (Without the **-v** argument, **add** does not echo anything about what it is doing).

• The **add** command no longer passes arguments to the **attach** command (i.e., you can no longer have expressions such as **add -n** *filesystem*).

• You can now use the **add** command in your ˜/.environment file for use during session initialization. Previously, **add** was not available during this phase of the login process, but only after you were completely logged in. (Be careful: even though **add** is now available earlier in the login process, it may not be appropriate in some initialization files, e.g., .twmrc.)

• You can now specify colors for workstations with color display heads. To specify different "colors" for monochrome, grayscale, and color heads (in that order), you use comma-separated lists of colors in the appropriate resource files. (This applies only to certain programs -- not all programs have resources for supporting comma-separated color specifications.)

• The **twm** window management program has been revised to distinguish between grayscale and color monitors. Specifically, on machines with grayscale monitors, **twm** no longer uses the "Color" keyword specification for selecting color options; instead it now uses the "Grayscale" option. (This is a new feature and is not compatible with older versions of **twm**.)

• The **kermit** program and its associated manual pages have been removed from the release to a new locker named **modem** to allow updates outside of the release cycle. The new **modem** locker will also contain other software useful while dialed up (as such software becomes available), as well as hints from end users (as they are learned).

• On all platforms, the maximum number of processes allowed per user has been raised to 64 (this is up from 46 on VAX and RT's, and from 50 on Ultrix-based systems).

3   Help/Information Resources

3.1   Student Information Services (SIS) Program

An important new facility, the Student Information Services (SIS) program, is now available. SIS lets students access their grades, as well as other information about themselves in the Registrar's Database, directly from their workstation. SIS also lets *any* user browse extensive Course Catalogue information and a set of answers to commonly asked questions called "Ask the Registrar".

To use the SIS interface, just enter the following command at your athena% prompt:

```
sis
```

If you are a student wanting to access your private records (e.g., grades), you will need to supply a special password. (If you just want to view general course information, you do not have to enter a password.) The SIS password is different from your regular Athena password -- the Registrar-based information about you is considered especially private. You will need to register for your extra password separately, and allow several weeks before the password is recognized by the Registrar's database. To obtain your secondary password (this password is known as your "secondary Kerberos instance"), enter the following commands:

```
athena%   add register
athena%   reg_extra
```

This will prompt you to enter an extra password. Be sure to remember it, and to keep it especially secret! (Remember, this password is a key to your grades, not just your Athena account.)

3.2   Other Help/Information Changes

The following 7.4 changes affect other information-oriented Athena programs:

• The **machtype** command can now give information on the version of the Athena release affecting your workstation:

```
-------------------------------------------------------
Option    Prints Out Version Number of ...
-------------------------------------------------------
  -P      Athena system packs attached to workstation
  -L      Athena installed on the local workstation
  -A      Athena that machtype was compiled under
-------------------------------------------------------
```

• The **cview** program, which gives information on the availability of public Athena workstations, now reports the status of RS/6000 machines correctly.

4   Communicating with Other Users

Several minor user-visible changes related to electronic mail were made in 7.4:

• A problem that caused users to lose mail when they tried to incorporate (Inc) when over quota has been fixed. This problem showed up on RISC/6000 workstations, and possibly DECstations.

• The commands that help you create and maintain mailing list groups (blanche, chpobox, listmaint, and moira) now try to prevent you from setting up bad mail forwarding through the mailhub. These commands will not let you set up a pobox to a "foreign" address that is really on the local mailhub. They also will not let you enter type "string" mailing list members that do not indicate a foreign address.

• The sendbug command used to fail for non-MH users because it tried to create the default MH path for you. This problem has been fixed (sendbug no longer tries to create the default path).

5   Text Processing: Andrew and EZ

MIT has the latest Andrew version (5.1.1, in CMU's revised numbering scheme). Once again, many bugs have been fixed and several new features have been added. The following notes just summarize some of these. (See the **System Release Notes** for a more exhaustive list of changes.)

5.1   Motif Look and Feel Now the Default

To enhance the Motif "look and feel" of EZ, the Motif style of menubar (i.e., displaying the menubar across the top of the application window) has been adopted as a default for EZ windows. This helps make EZ look more like the majority of X applications on Athena. The traditional EZ pop-up "deck-of-cards" style of menu display is still available. (This is the style of menus that is accessed by pressing and holding the **MIDDLE** mouse button).

If you would prefer to disable the Motif-style menus (retaining only the old pop-up style of menu interface), you can add the following line to your ˜/.preferences file:

    *.Menubar: no

5.2   FormatNote Text Now Graphically Distinguished

Text marked with the **FormatNote** style (i.e., text that you want to have passed unconverted to the **troff** formatter) is now displayed on the screen with a horizontal line through it. This indicates graphically that this text is "special", to help you avoid inadvertently entering text that you mean to be part of the document into a region using the **FormatNote** style.

5.3   Dealing with Unformatted Files

Two new menu options to deal with raw formatting have been added to the File menu for EZ, as well as for all the other Andrew text-based editors (such as **eos** and **grade**):

● The **Save Plainest As** menu option prompts you for a filename and saves the current buffer under the new filename, with all the EZ formatting stripped out of the file. You can use this command, for example, when you have somehow gotten formatting into a file that should be only plain text (e.g., a configuration file). For instance, if you paste from OLH into your plain text file, there is currently a bug which formats the file without telling you; the **Save Plainest As** option allows you to restore the file to an unformatted state.

● The **Visit Raw File** menu option allows you to edit a formatted EZ file as if it were a plain-text file, so that you can directly edit the special format instructions in the file. This is useful, for example, if you have applied styles to a document in such a way that it so confuses EZ that it cannot make sense of the formatting. (Note that this option first checks whether there is already a buffer containing the named file and, if so, it simply switches to that buffer; if you have already read in the file in regular mode, EZ does *not* read the file in again. In this case, to get EZ to read in the uninterpreted "raw" version of the file, you will need to either start another EZ, or use C-x k to kill EZ's internal copy of the regular mode file then use the **Visit Raw File** option again to

read in the raw version.)

Another new option related to processing "raw" text is the **Append to Raw File** in the Andrew message menus. This option eliminates those needless `begindata{text822}` headers.

5.4   Simplified **andrew** Locker Arrangement

You will never again have to worry about attaching the wrong **andrew** locker! There is now a single **andrew** locker (rather than three distinct lockers) that contains the three versions of Andrew software:

* the current version that matches the system packs
* a version that is compatible with the previous Athena release
* a version that is experimental for use by friendly testers

The system packs now contain a subset of Andrew that understands which version to look for when accessing advanced features from the locker. You can find the current versions of things under /mit/andrew/5.1.

If you have init files such as ~/.ezinit which included files from the **andrew** locker you probably had a line like this in them:

```
include /mit/andrew/rt/lib/global.prf
```

A new way of specifying the current correct **andrew** directory automagically has been added. Just change the above line to the following:

```
include $ANDREWDIR/lib/global.prf
```

With this version, EZ can now find the **global.prf** file relevant to whatever version of Andrew software you are running -- unless you run the old Athena 7.3 version, which does not know how to work with this special method. (Note that if you choose to leave your **include** commands in the first form, you will get the old Athena 7.3 versions of the included files; when Athena 7.5 comes out, there will not be any files there, because everything in the Andrew locker will have moved by a version number, so you should consider using the second form above.)

5.5   Other User-Visible Andrew Changes

Many activities have been optimized, resulting in improved speed and performance. Other specific user-visible changes include:

* As announced last year, the **datapros** command is being eliminated from the release. The command was superseded by the **datacat** command some time ago. By Release 7.3, the **datapros** command was just a shell script that told you to run **datacat** instead; now even this shell script has been eliminated.

• On color screens, the scrollbars have a 3 dimensional look.

• A subtle change was made in the way Andrew fonts are mapped to X fonts on the screen. This may cause a few fonts to appear of a different size on the screen than they used to. (Your file will print the same as it always has.)

• The **ahelp** command now has you set printer characteristics via the dialog-box-based **Printer Setup** option rather than the **Set Printer** option. (The old **Set Printer** is being phased out, and is already replaced by **Printer Setup** in EZ.)

• The EZ preview window now recognizes some additional key bindings (**C-v** for **Next Page**; **M-v, DEL, C-h, BACKSPACE,** and **b** for **Previous Page**).

• Users of EZ who edited files via symbolic links got different behavior from what users of GNU Emacs got. (A symbolic link is a way for several names to point to one destination file.) Now the behavior is the same as it is in GNU Emacs: a copy of the old file is made in the directory containing the symbolic link, and the changes you make modify the destination file of the symbolic link (rather than taking effect by replacing the link with a file, as in earlier releases).

• Environmental variables embedded within target filenames are now recognized in the **include** command (in init files) and in hyplink objects. For example, if $FOO or $(FOO) or ${FOO} appears in a target name in an init-file **include** command, and FOO is an environment variable, the **include** command replaces the callout with the actual value of FOO in the target name string before going ahead with the inclusion.

• The **raster** command now has menu commands to take X window dumps.

• The **PostScript** inset can draw the PostScript on screen if run on DECMIPS or RISC/6000 (the VAX and RT do not have the required PostScript X extension.)

• The andrew multi-media mail system is now compliant with the emerging MIME multimedia mail standard.

6 Notes for Programmers

Programmers should of course be sure to look at other sections of this document, as well as the System Release Notes. A few changes of particular interest to programmers are the following:

• Perl, a language for easily manipulating text, files, and processes, is now available in the Athena release. (For documentation on Perl, see the huge **perl** man page or the book **Programming perl** by Larry Wall and Randal Schwartz, published by O'Reilly & Associates.) Perl includes the features found in **sed**, **awk**, and various shell programming languages, as well as many other useful constructs. The binary is located in /usr/athena/bin/perl. Along with the main program **perl**, several associated programs can help you convert existing scripts to **perl** format:

```
---------------------------------------------------------------
Command       Function
---------------------------------------------------------------
s2p           translates sed scripts to Perl
a2p           translates awk scripts to Perl
find2perl     translates find commands to Perl
h2ph          translates .h C header files to .ph Perl header files
---------------------------------------------------------------
```

• All DECstations have been updated to a newer version of the Ultrix operating system (version 4.2A; the previous version was 4.2). This means that the following architectures are supported by Athena Release 7.4:

VAX BSD 4.3
RT AOS 4.3
DECstation Ultrix 4.2A
IBM RS/6000 AIX 3.1

• The NEOS libraries are now included in the release. This includes libfxrpc.a and the header files in /usr/athena/include/fx. For more information about these "File Exchange Client" libraries, type **man fxcl** at your athena% prompt.

• Based on user requests for consistency, the following programs are now present on all platforms: **tac, jot, lam, rs,** and **tmail.** (These programs were previously present only on the VAX and RT platforms.)

7 Notes for Private Workstation Owners

Several changes made in Release 7.4 are of special interest to owners of private workstations. The changes are summarized here; for the details, see the **System Release Notes**.

Note that a "private workstation" is not just any workstation located outside a public cluster, but is specifically any workstation that has the variable **PUBLIC** set to **false** in its local /etc/athena/rc.conf file. Also, to make any of the changes suggested below, you need to log into the private workstation with the username **root**.

• The **mkserv** command (which helps add or delete services on an Athena workstation) is still in the release, but it is now just a pointer to an executable stored in the new **mkserv** locker. You still just call the program as **mkserv** (you do not have to attach the locker). This setup allows Athena developers to add new services to **mkserv** as they become available, not just during each new Athena release, while leaving the **mkserv** command available in the default user path.

• The pre-login idle screen of any Athena workstation can now display a short text beneath the standard Welcome to Athena banner. You can disable this behavior (i.e., have no extra text message displayed) by putting a line of the following form in a file named /etc/athena/login/Xlogin.local (you may need to create this file):

        *showMotd: off

• The pre-login message is read from a standard system file maintained in AFS; this allows the system to broadcast important operational messages. You can also specify a second file (to append a local message to the standard text) by putting a line of the following form in a file named /etc/athena/login/Xlogin.local:

        *motd2:   filename

• You can now configure **xlogin** to automatically fill in a specific username as a default in the login screen of your private workstation. Then that specific user will only have to press **RETURN** and type his or her password. This can be convenient, for instance, if you have a workstation in your private office and are the sole user of the machine -- you can set your own username as the default. (Someone else logging in will have to backspace over the name, or type **Ctrl-U**, then enter their own username). You set the default login-screen username by putting a line of the following form in a file named /etc/athena/login/Xlogin.local (you may need to create this file):

        *loginName: username

• You can now restrict remote access to a private workstation to a specific list of users while still allowing anybody sitting at the workstation to login. If the file /etc/noremote exists, only the users listed in /etc/passwd will be allowed to login remotely, while all other users will be denied access, with the contents (if any) of /etc/noremote printed. (If you decide to restrict access by creating a file named /etc/noremote, you should also be sure to set the corresponding variable **NOREMOTE** in /etc/athena/rc.conf to **true** to assure that the change persists through reboots -- i.e., that the file /etc/noremote is not automatically removed during reboot.) Various implementations of a "noremote" scheme have existed in the past, none ever supported; the method described here is the method officially supported by **mkserv remote**. (Other previously supported **mkserv remote** options work as before.)

• On multi-headed displays, all of the screens will now be blanked while **xlogin** is idle. (You can modify this behavior by including the **-blankall** or **-noblankall** option in the uncommented "login" line in the file /etc/athena/login/config).

• An enhanced version of **ftpd** is provided to better support the Athena environment. The new version has not replaced the standard **ftpd** but is provided in /etc/athena/ftpd; to use it, you need to make changes to /etc/inetd.conf. (This version currently does not work on the RS/6000.)

• It is no longer assumed that /usr/vice is a symbolic link to /site or /var. (This has affected some private workstation owners who had moved their cache in the past.)

• An Athenized version of the X Consortium's X Display Manager (**xdm**) is included in this release. It can be used to have a private Athena workstation host an X terminal, letting an Athena user login to the private workstation on the X terminal. Some special setup is required. (While the program will work for one or two X terminals per workstation, it is not recommended on a large scale; Athena has not yet attempted to address scaling and management issues for large deployments of X terminals.) For information about the **xdm** program, type the following at your athena% prompt:

    man xdm