1 New VAX Workstation Release April 1

In early April, Athena will release a new version of its VAX Workstation software. This release 3.0 replaces the 2.2 version we have been running since last November. The release involves both the software local to the workstation in */site* and the Remote Virtual Disk system and user libraries (vssys and vsusr).

Public workstations in 4-035, 11-115, and 37-3xx will receive the release on April 1. After several days, Athena Operations will upgrade the RVD servers *socrates, gaea, persephone, M4-035-S* and *M4-035-V* to the new release. A workstation can run with the new release on an old server. Workstations with old releases will not work with new servers. Developers with private development workstations should therefore contact their assigned student Systems Manager and arrange to have the new release installed on their machine as close to April 1 as possible.

There are significant user-visible changes in this release. The following summarizes the changes.

1.1 New Version of X Window System

The workstations will move from X Version 10, Release 3, to X Version 10, Release **4**. The change creates new versions of the X server that runs on the workstation, the X C library, and various X client programs.

For people who just use the window system, the change is unimportant if you wish to ignore it.

X V10R4 has two main features:

- There is a new version of the *xterm* terminal emulator from UC Berkeley. Type ***nxterm*** to get it, and ***man nxterm*** to read its manual page. It has many new features such as titlebars, scroll bars to record your session in a way that largely supplants the shell history mechansm, and pull-down menus to set three dozen terminal options. The old *xterm* will be replaced with this new *xterm* in a coming release, so it is a good to familiarize yourself with it.
- It has numerous small bug fixes to the R3 server, library, and documentation. Persons developing X client applications should probably relink.

X V10R4 is the last release of X before Version 11--a significant, non-forward compatible advance to the protocol--becomes available.

The R4 manual is for sale at the IS Publications Office in 11-209 (M-F 10-4, x3-6325) under the title *X Window System Manual* for $8.80.

The "toolkit" libraries discussed in the R4 release notes in the manual are not available in the Athena release. Faculty development projects should contact their Applications Developer if they want to know how to use the toolkits.

1.2 CCA Emacs Removed from System

The old CCA Emacs, invoked with the *ccaemacs* command, has been removed from the system. After a year's transition, all should have converted to GNU Emacs by now.

1.3 GNU Emacs Bug Fixed

If you entered GNU Emacs by just typing the command *emacs* without giving a filename, Emacs would **not** ask you to save your editing work when you exited with C-x C-c: it would just throw the work away. Many people were accustomed to doing this under the old CCA Emacs, and lots of people have lost lots of editing work.

A fix has been made to GNU Emacs so that it will now prompt you for a filename to save the buffer in when you exit. The fix will not work, however, if you change major modes while you edit (for example, going from fundamental mode to C mode). Users who do this are usually aware of what they are doing, so we think most of the problem is solved.

1.4 XIO: Broken Pipe Message Re-emerges

People who remote login from a workstation to other machines--for example, to read their mail on a timesharing system--are going to start getting a lot of infamous "XIO: Broken Pipe" error messages. This will occur when they do anything on the timesharing system that tries to create a window (e.g., *emacs* or Mh's *comp*). This will likely affect most people.

The problem comes from an unfortunate combination of system factors wherein Athena basically had to choose between confusing people and facing occasional situations wherein every workstation on the network would be unusable.

To get rid of the XIO: Broken Pipe error message: *before* you do the remote login to the timesharing system, *on the workstation*, type:

xhost +*timesharing-machine-name*

Replace *timesharing-machine-name* with whatever timesharing host you are going to remote login in to. (If you are going to another workstation, you have to do this, too.) For example, if you are headed off to *teela* in W20, type on the workstation:

xhost +teela

This won't work if you type it to teela. What is happening is that you are telling the workstation that it is OK for some process off on teela to try to create a window on its display. It is a kind of reverse direction *setenv DISPLAY*. You can type *xhost* after you've done the remote login, provided you still have a window that's talking to the workstation.

Since people tend to frequent the same timesharing hosts over and over, it is reasonable to put this *xhost* command into your *.login* file so that you will be set-up automatically each time you login.

What is happening? If you must know...

xhost is X's security mechanism--it is what prevents anybody anywhere from creating windows on your display. But because the mechanism was obscure and confusing people with "XIO: Broken Pipe" messages, Athena modified a file on the workstation called */etc/X0.hosts* to give every timesharing system in the network permission to create windows on the display; in effect, we disabled the security mechanism. It developed, though, that because of the way X starts itself each time somebody presses "Hit any key to start," if the Athena nameservers didn't know about some of the timesharing systems, the boot was delayed two minutes for each timesharing system missing. If enough timesharing systems were missing from the nameserver, the boot process would timeout and the workstation would never initialize.

All workstations became useless. This was happening often enough to be a problem. It was also true that some people were beginning to realize how open all the displays were and were beginning to grafit.

In early summer, we plan to "kerberize X," meaning that *xhost* will be replaced by a security mechanism that has the same effect, but is transparent to the user.

1.5 New Versions of *in/out*

There are new, less verbose versions of the *in/out* programs for reading and writing files from the workstation's temporary HOME directory to floppy disk and tape. The interaction is largely the same, but one only gets the several paragraphs of explanation if you ask for it by typing "h".

in now sources the *.login* and *.cshrc* automatically by default. If you don't want to source these files, instead type */usr/athena/in*

1.6 Prochart

The ***prochart*** interactive bar/line/pie graphing program has not worked correctly in any previous release. We believe that it works now. Type *man prochart* for information.

1.7 Xerox 9700 Support

You no longer have to type */usr/unsupported/sipb/print_9700* in order to send plain text or multifont Scribe .9700 to the Information Systems Xerox 9700 laser printer. Just type: *print9700*

1.8 Easier Remote Login and Remote Copy

The *rcp*, *rlogin*, and *rsh* commands have been "Kerberized," making operations between network machines easier.

Kerberos is Athena's new "authentication server." ("Kerberos" is the name of the three-headed dog that guards the gates of Hades in Greek mythology.) Basically, Kerberos is taking over the function of deciding who has the right to do operations over the network. Under the old Berkeley inter-machine protection mechanisms, remote logins to other systems and, particularly, remote copying of files between systems could be very frustrating. If you didn't have some "trust" switches set correctly in *.rhost* files, efforts to rcp files would dead-end in obscure "Permission denied" error messages.

Now the Kerberos server machine tells the two machines involved in the rcp or the rlogin that you are, indeed, yourself, and that it is OK to let you rlogin without a password, and to rcp files without the hassle of setting up trust.

For Kerberos to work for you, you must first register with Kerberos. To register, simply *change your password* on any *timesharing* host. (*passwd* still doesn't work from workstations.)

If the Kerberos server happens to be down, the system reverts to using Berkeley trust rules. Hence, although Kerberos may make rcp'ing easier most of the time, it is still possible that the "Permission denied" message may reappear. We plan to have redundant Kerberos servers by summer.

1.9 Remote Virtual Disk Improvements

This system release brings RVD version 3.0. This version of RVD has been "kerberized," meaning that you no longer have to give a password to *up* your own RVD. This is mostly of concern to faculty developers and course instructors maintaining RVD packs password-protected in exclusive mode. There are two new commands useful for RVD maintenance. *rvdhost* prints all the hosts named in the */etc/rvdtab* file, and *vdabort* forces a spindown even if you can't communicate with a server.

1.10 Kermit

The ***kermit*** terminal emulator program from Columbia University has moved from */usr/unsupported* to */usr/new* on the default search path, becoming "supported." Kermit is used extensively for file transfer between Athena and IBM PC's, and by people with their own micros acting as terminals.

1.11 Unsupported Remote File System

A command */usr/unsupported/start_rfs* has been added to the unsupported software set so that people who elect to use this remote file facility can turn it on. (See article elsewhere in this newsletter.)

1.12 New *tftp*

The *tftp* "trivial file transfer protocol" program has been "Kerberized." This means that you can now use *tftp* to transfer between any two Athena machines, not just within local subnets.

1.13 Miscellaneous Fixes

- You can now resize the original login window and most programs (such as *more* and *emacs*) will behave correctly, no longer scrolling text off the screen.
- The workstation "deactivates" (spins down its RVDs and returns to the "Hit any key to start" screen) when nobody is logged in after one minute instead of five.
- The root password is reset to the standard *mrroot* at every deactivation, so that people can know what the password is when they need to become root.
- All RVD commands including *up* and *down* have been moved to the directory */bin/athena*, becoming part of the few permanently resident files on the workstation. */bin/athena* will now be in the default search path created by */usr/prototype_user/.login*. Even if people have old *.login* files, this should be transparent since *up, down* and *rvdshow* have symbolic links pointing from */usr/athena*.
- A bug that occasionally caused the workstation to fail to start X properly ("can't open display" error message) at startup has been fixed.
- At workstation startup, if the initialization process discovers that the workstation's file system has been damaged (for example, because a person had to reboot a "frozen" workstation with the "Restart" button while the system was in the middle of a critical file I/O operation), the workstation will now HALT and tell the user to call the Hotline. It will not boot, nor allow the user to attempt fsck repairs. A user who sees this message should call 3-1410 to report the problem, and then use another workstation.
- The workstation no longer produces errors messages about the sort command at deactivation.
- If you login as the user *shutdown*, the workstation will deactivate in "Halt" state. >>Win, was there some point to this? And isn't this a way that vandals could freeze workstations?>>

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