Athena System Release 6.4R
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** This document is textually complete but my lack of experience prevents me from having it formatted in the traditional fashion. Please refer to this copy until I have gained some mastery of the Tex formatter, probably early the week of the 18th. Thank you for your understanding.-Robin Garner, Project Athena Quality Assurance**

Introduction

This document describes the software changes in Athena System Release

It contains an overview of the important changes, and detail on the release as a whole. The release notes are written as a set of changes to release 6.3B.

I. Major User-Visible Changes

A. All Systems

A.1 Scribe

Thesis templates may be found in the thesis filsystem. Scribe 7 is the default.

A.2 New PostScript Previewers

xps, the postscript previewer has been installed in /usr/athena/xps with libraries in /usr/athena/lib/xps. It depends on the library file *psrc* found in the directory specified by the *POSTSCRIPTLIB* environment variable (defaults to */usr/athena/lib/xps*).

This version can cache fonts to disk and save them there provided a *cache* directory containing sub-directories matching the relevant files in the *font* directory exists. It will automatically load from the disk cache and is tolerant of absent cache fonts.

A.3 Motif Window Manager and applications

Version 1.0 of the Motif Window Manager is included in this release; the differences between this version of mwm and the version installed in the Athena 6.3B release represent bug fixes to that older version.

The following motif-based X Window System clients were installed:
xprint
xolc

A.4 Zephyr

A new version of Zephyr (ver. ???) is available in this release. The most user-visible change will most likely be the new *zwgc* which employs a new description language similliar to commonly used programming languages. It uses the abstraction of ports to deal with all *zwgc* I/O and allows for cutting and pasting from zephyrgrams. *ozwgc* exists for users wishing to use the old version.

Affected files are:

/etc/athena/zephyr.vars	/etc/athena/zhm
/etc/athena/zshutdown_notify	/etc/syslogd
/usr/athena/lib/libzephyr.a	/usr/athena/lib/libzephyr_p.a
/usr/athena/zaway	/usr/athena/zbrowser
/usr/athena/zctl	/usr/athena/zleave
/usr/athena/zlocate	/usr/athena/zmailnotify
/usr/athena/znol	/usr/athena/zstat
/usr/athena/zwrite	/usr/etc/ozwgc (really old one)
/usr/etc/zephyrd	/usr/etc/zpopnotify
/usr/etc/zwgc	/usrlib/lint/llib-lzephyr.ln
/usr/include/zephyr/krb_err.h	/usr/include/zephyr/zephyr.h

New files:
/usr/athena/lib/zephyr/zwgc.desc   (renamed from /etc/athena/.zwgc.desc)
/usr/athena/lib/zephyr/zwgc_resources

A.5 Removed From Packs

The following pieces of software were removed from the system and user packs:

Moved to lockers:
        macsyma: attach macsyma
        unsupported: attach unsupported
        franz lisp: attach franzlisp (THERE IS A USER FRANZ!!!)
                /usr/lib/lisp*
                /usr/include/lisp/*
        Saber 1 : attach saber1

Removed:
        */usr/athena/{in,out} - old shell scripts saying that they did not exist
        anymore
        */etc/athena/flush_olc_userlogs
        */usr/lib/bug_report - New sendbug does not need it
        */usr/athena/.{login,cshrc} - Old dot files no longer supported
        *rs1 support files:
                usr/athena/rs1
                        rs1edit
                        rs1fix
                        rs1install
                        rs1print
                        rs1fix
                        rsprint

pen
hex
priplt
tbldmp
troll
unhex

*/usr/athena/xman - X11R3 provided it in their release
/usr/athena/lib/xman.help
*/usr/athena/gnuplot - out of date and said to attach xmath
*/usr/athena/lib/owl.dat
 /usr/athena/owl
*/usr/athena/saber1
*/usr/athena/scheme - was a shell script
*/usr/athena/scribe5 - was a shell script telling to attach Scribe5
*/usr/doc/kerberos

B. RT/PC

There has been a compiler change on the RT platform. The old compiler, *hc2.10*, has been replaced with the newer version: *hc2.1S*. *hc* and *cc* both point to *hc2.1S*.

C. VAX

II. Kernel Changes

A. Kernel Changes in Common

A.1 NFS
The RPC code was largely reworked. The *rpc* directories found on both the RT and VAX in the kernel sources and in the C library have been merged. On the RT, this merge results in the loss of backwards compatibility for some executables that depend on rpc's to interact with the kernel. The following programs are affected:

/bin/athena/attach	/etc/mount
/etc/rpcd	/etc/umount
/usr/ucb/quota	/usr/athena/xquota
/usr/etc/nfsc	/usr/etc/mkcred
/usr/etc/rpc.mountd	/usr/etc/rpc.rquotad
/usr/etc/rpcinfo	/usr/etc/showmount

As a side effect of the change in the RPC code,the format of the hashed *dbm* files: */usr/etc/credentials{.dir,.pag}* has changed. It is essential that */usr/etc/mkcred* be run prior to re-enabling NFS service .

A.2 AFS
UDP checksums were added to incomming packets as a partial fix to the problem of network lossage leading to undetected packet loss.

The AFS error message indicating an inaccesable server was modified to give the

server's proper IP address instead of the Ethernet address.

Memory disk support was added to the kernel. This is primarilly for use in installations so that the kernels can be booted over the network using the "netboot" facility added in 6.3B. Affected programs are:

    conf/devices.ca (RT)
    conf/files.ca (RT)
    conf/devices.vax (VAX)
    conf/files.vax (VAX)
    machine/md.c
    machine/conf.c

MAXSYMLINK has been upped from 8 to 20 (*[changes#922]*)

afs/afs_resource.c was changed to be a uprintf, printing a message to the user that their tokens have expired, rather than logging a kernel message.

A bugfix was made to *net/nit.c* to avoid corruption of data on the nit socket to correct the problem where data was being appended to the socket inconsistently.

The following changes to headerfiles were made to make both RT & Vax versions consistant:

/usr/include/netinet/rvd.h
    /usr/include/nfs/nfs.h
    /usr/include/nfs/nfs_clnt.h

  /usr/include/nfs/mode.h

B. B. VAX Kernel Changes

The Vax kernel has been modified to fully integrate the vs3100 code such that all boot flags are now honored.

The long delay encountered in 3100 reboot while probing for devices has been reduced

Kernel/clock problems during reboot resulting in the "TODR too small" message have been fixed by allowing it to subtract a year's worth of seconds until the time falls within the accepted range.

Support for the SG driver has been added

The same kernel now runs on all Vax platforms (VaxStation 2000, VaxStation 3100, and VaxStation 3600/3900). The following header files were affected:

    /usr/include/sys/conf.h
    /usr/include/sys/devio.h
    /usr/inculde/sys/errno.h
    /usr/include/sys/param.h
    /usr/include/vax/

5380reg.h (new)
cpu.h
ka630.h
machparam.h
mtpr.h
nexus.h
pte.h
scsireg.h (new)
scsivar.h (new)
siireg.h (new)
vaxstar.h (new)
vmb.h
/usr/include/vaxscsi -> vax (new)
/usr/include/vaxuba/

plxioctl.h

plxmd.h (new)
plxreg.h
qduser.h
sdcreg.h
sdcreg.h
sgioctl.h
sguser.h
shreg.h (new)
stcreg.h
ubareg.h
ubavar.h
vdreg.h
sgreg.h

Removed:
/usr/include/vaxuba/plxdata.h (ancient)
/usr/include/attach.h

C. RT/PC Kernel Changes

Support for unmodified AED monitors has been removed. Upgraded AED's work with drivers for the APA displays.

Support for the VIPER parallax board has been added.

The kernel now builds entirely with hc2.1s. Changes were required to:
afs/afs_vnodeops.c
afs/param.h

III.
Manual Page Updates

General

All of the manual pages have been reinstalled and all of the X man pages in section 3

were expanded so that all X rountines may be found by using man.

A. New Manual Pages

ozwgc.1	krb_get_admhst.3	krb_get_krbhst.3		
krb_get_lrealm.3	krb_get_phost.3	krb_net_read.3		
krb_net_write.3	krb_realmofhost.3	krb_recvauth.3		
krb_set_tkt_string.3	rkinit.3	tzset.3	krb.conf.5	krb.realms.5
	klogind.8	kshd.8	ksrvutil.8	
mkcred.8	mknf.8	netconfig.8	rkinitd.8	rmnf.8
rvdhosts.8	vdabort.8	autoseq.n	ksrvtgt.1	ksu.1
rkinit.1	rlogin.1 rsh.1			
quota.2	setquota.2 tftp.1	xprint.1 getfloatstate.2		
getfpemulator.2	nfs_mapctl.2	vdspin.2 vdstats.2		
portmap.8c				

B. Updated Manual Pages

man1/zwgc.1	man1/mkdep.1	man1/passwd.1		
man1/initex.1	man1/latex.1	man1/tex.1		
man1/virtex.1	man1/machtype.1	man1/df.1		
man1/dvi2ps.1	man1/mkdir.1	man7/ascii.7		
man1/csh.1	man1/telnet.1c	man3/scanf.3s		
man1/mkdir.1	man1/zwgc.1	man1/access_on.1		
man1/scribe.1	man7/printers.7	man8/activate.8		
man8/toehold.8	man1/find.1	man1/finger.1		
man1/lastcomm.1	man1/mkdir.1	man1/more.1		
man1/pr.1	man1/stty.1	man1/tftp.1c		
man2/sigpause.2	man5/printcap.5	man8/pstat.8		
man1/zwgc.1	man1/emacs.1	man1/find.1		
man1/tset.1	man2/getsockopt.2	man8/mkcred.8		
pdpr.1	pdrm.1	pdpq.1	ls.1	machtype.1
moira.1	delete.1	expunge.1	lsdel.1	eqn.1
mwm.1	newaliases.1	hesinfo.1 hostinfo.1		
infoclient.1	kdestroy.1 kerberos.1 kinit.1	klist.1		
kpasswd.1	passwd.1	pr.1 prochart.1	purge.1	refer.1
telnet.1c	tftp.1c tset.1			
undelete.1	xman.1	znol.1 zwgc.1	zwrite.1	getsockopt.2
	hesiod.3	kerberos.3		
krb_sendauth.3	scanf.3s	sms.3		
rvd.4p	aliases.5	printcap.5	subscriptionlist.5	ascii.7
activate.8	kadmin.8	named.8 pstat.8	restore.8	sendmail.8
tftp.8	tftpd.8 toehold.8			
vddb.8	vdstats.8	xmb.n		
find.1 finger.1	lastcomm.1 mkdir.1	more.1 pr.1 stty.1		
tftp.1c tset.1	getsockopt.2	sigpause.2 printcap.5		
mkcred.8 pstat.8	access_on.1	emacs.1 scribe.1		
printers.7 activate.8	toehold.8	attach.1		

C. Deleted Manual Pages

man1/gmotd.1	rcp.1c	rlogin.1c	rsh.1c	ruptime.1c
icreate.2v iinc.2v	iopen.2v	iread.2v	iwrite.2v	
pioctl.2v setpag.2v wm.n		xprkbd.n	xversion.n	

Workstation and Server Updates

PVAX support has been provided and both *machtype* and *tcsh* have been modified to support it. PMAX support is provided in an informal fashion with parts of the Athena system riding on the Ultrix kernel.

V. Bug Fixes

The following minor changes and bug fixes have been made in this release:

A. Entries from the "Changes" notesfiles:

[changes#885] typing *^D* at the Password prompt caused "Password:" to be printed over and over ad nauseum

[changes#889] When contact with an AFS server is lost, the server's IP address is reported in readable fashion, rather than as a hexadecimal string.

[changes#901] *machtype* has been modified to adequately support the PMAX and PVAX.

[changes#911] the track subscription list has been modified to treat *attach.conf* as an exception.

[changes#918] *unix:0* was changed to *unix:0.0* in */etc/ttys* to solve problems users had with zctl when the console was on *unix:0* and xterm on *unix:0.0*

[changes#922] MAXSYMLINKS */usr/include/sys/param.h* has been defined as 20 (formerly 8).

[changes#925] console terminal type on vax workstation has been changed from vt100 to ansi.

[changes#930] permissions for the X drivers have been changed to allow *xinit* to be run by non-root users.

[changes#935] DEQNA had problems talking to the ethernet, probably a side effect of the fix to the DELQA.

[changes#938] useless code affecting the allowability of a second X server was stripped from */etc/ttys* .

[changes#955] */bin/athena/attach* returned status=0 even when it failed attach a filesystem.

[changes#967] symlink created from */core -> /usr/tmp/core.root* and the cleanup routines modified to replace it after cleanup.

[changes#973] comment in rc.conf changed to include VS3100

[changes#978] *lsdel* now return nothing when there are no deleted files to list instead of "no match".

[changes#980] mkserv remote copies */etc/telnetd, /etc/rlogind, /etc/rshd, /etc/ftpd, /etc/fingerd, /usr/ucb/rlogin.ucb* & */usr/ucb/rsh.ucb* to disk and creates a symlink farm for the last two.

[changes#987] new version of the *delete* software has been included

[changes#989] support added for inter-realm kerberos

[changes#998] **The rewrite of *mkserv* has made this obsolete.**

[changes#999] **This bug and fix are obsolete because */usr/new/tac* is no onger required on Hesiod servers.**

[changes#1006] *spop* has been modified to send one zpopnotify per mail message.

[changes#1007] there is now a lint library for *com_err* .

[changes#1008] *whois* no longer spews out an endless string of NULLs.

[changes#1012] *mksrv remote* now copies */etc/ftpusers* to local disk

[changes#1014] The makefile for building *ss* v.1.6 has been fixed to properly clean the profiled version.

[changes#1033] patches have been applied to */etc/rc*.

[changes#1034] the protection on */urvd/root/etc/athena/zephyr.desc* has been set to 644 to allow users who copy it to modify it with chmoding it.

[changes#1039] the old version of *attach.h* has been removed from /usr/include.

[changes#1058] mkserv died on AFS when it tried to check for current directory=*/urvd/root/servers*. Now, it checks for */afs/athena/system*...

[changes#1063]: */tp/eftp* is replaced by */tp/etftp* in */srvd/servers/stand*

[changes#1070] *attach* now checks all calls to malloc for succesful completion before attempting to use memory that malloc was intended to allocate.

[changes#1087] X server has been recompiled with GCC version 1.36

[changes#1102] missing ";" in *rpcsvc/*.h* has been inserted

[changes#1112] Access checks have been remoced from /bin/chgrp (they are done in the kernel) and appropriate error messages are returned if the user does not have the required access to make a change.

[changes#1126]The dependence of Kerberos within the kernel ahs been removed if the symbol KERBEROS is not defined.

[changes#1128] *hostinfo* now has code to interperet error codes

[changes#1144] Seiko 8620 termcap entry has been added.

[changes#1154] MH paths have been corrected in emacs

[changes#1158] *sendmail.cf* has been patched to handle UUCP addresses that start with fully qualified domain names.

[changes#1160] text redisplay on the megapel X server has been fixed to properly display characters at the bottom edge of the screen

[changes#1161] */usr/ucb/lint* has been patched to properly parse command line arguments with -I,D,C,O,U.

[changes#1171] *lint* no longer passes the -0 falg to */lib/cpp*

[changes#1186] *#include <errno.h>* now results in *errno* being declared as **extern int errno** and *sys_errlist* being declared as **extern char *sys_errlist[]**.

[changes#1192] *zpopnotify* will no longer send <*n* where n is equal to the number of intended recipients> z-grams for a single piece of mail to the first recipeint of the mail message. Now, it sends one z-gram to each recipient.

[changes#1199] *catman -p* no longer exits when the filesystem in question is read-only.

[changes#1201] The invocation of *sendmail -q* run from cron on all activated workstations every hour has been spread out (multiplier increased to 13) over the entire hour to reduce the load on the mail server.

[changes#1202] it is now possible to cut/copy from a zgram (new zwgc) and paste in to an emacs buffer.

[changes#1203] it is now possible to cut/copy from any ICCCM- compliant X program and paste in to an emacs buffer.

B. Fixes and changes for which there were no "changes" entries

/bin/athena/hostinfo - now has better error parsing.
/etc/chown - now accepts negative uid's as arguments.

/bin/athena/machtype - includes SG support & new features like -M (memory) - see man page

/dev/MAKEDEV - includes 3600/3900 tape drive config & color vs3100 device support (sg)

/etc/athena/newsyslog.conf - lines have been added for palladium & rvd & afs

/etc/servers - removed services that are not supported. Could cause problems if someone probed them remotely.

/etc/athena/xdm/Xsession stty dec added

/etc/syslog.conf - reorginized to avoid duplicate messages

/bin/ls - uses hesiod to lookup users

/usr/athena/[ce]tags - now works on the RT

/usr/ucb/systat - now worls on vs2000 and vs3100

/usr/bin/X11/xman - The number of man pages per section doubled to 1600.

/usr/athena/print9700 - verifies that a filename has been entered, and tests for the entering of a <ctrl>-D.

/usr/bin/install - Fixed problem with Z0MAGIC install being wrong

/usr/athena/xlogout - Fix to allow not running end_session when button pressed. This allows one to use xlogout in their own .xsession files.

/usr/athena/lib/init/xsession - prevent hanging login better

/usr/athena/lib/init/{cshrc,env_setup,env_remove} Fixes to course setup scripts for non-X logins.

/usr/bin/find - supports a new flag -rm and -rmf (also reinstalled /usr/lib/find/*

/usr/athena/psroff - will now accept both -P printer and -Pprinter now

/usr/etc/catman - "-p" works on read only filesystems and better errors

/usr/etc/edquota - Better error message if no quota enforced systems exist

/usr/athena/xmore - Now compies under X11R3

VI. Other Changes

A. BIND 4.8.1 and Hesiod
The new version of Hesiod brings us up to date with the code that we distribute.
The servers are now capable of load sharing

There has been a change of type from UNSPECA to TXT for hesiod requests. Any private workstation owners who have Hesiod data in their */etc/named.local* files will have to convert the entries to use TXT rather than UNSPECA.

There is support for MX records on the server side.

The cache now gets flushed when TTL is exceeded.

We now use the latest version of BIND 4.8.1. The following files were affected by the upgrade:

/usr/include/hesiod.h
/bin/athena/get_message
/bin/athena/getcluster
/bin/athena/hesinfo
/bin/mail
/bin/rmail
/usr/lib/sendmail*
/usr/athena/bulkpost
/usr/athena/postit
/usr/athena/whatsup
/usr/lib/libresolv.a
/usr/lib/libhostlib.a
/usr/athena/lib/libhesiod.a
/usr/athena/lib/libhesiod_p.a
/usr/lib/lint/llib-lhesiod.ln (new - installed)
/etc/athena/messaged
/etc/named
/etc/named.boot
Removal of /etc/named.\{ca,hes\}
Added /etc/named.\{root,mit\}
/usr/ucb/lp*
/usr/etc/lpc
    o_lpc
    o_lprm
    pac
/usr/lib/lpd/*
/usr/athena/xquota

B. Bug Reporting System

/usr/athena/sendbug has been rewritten to automatically retrieve some information and to request more specific information for the user.

C. Delete

The changes to the delete system include some bug fixes and some new features:

Several bug fixes related to file matching were applied
Better error handling and error messages were added
New flag ''-e'' to force rm/rmdir emulation -- stupid rm error
Messages are no longer the default
New file matching code more reliable and faster

/bin/athena/delete
/bin/athena/expunge
/bin/athena/lsdel
/bin/athena/purge
/bin/athena/undelete

D. Attach

Changes made to attach and detach represent bugfixes to earlier releases; some of these

problems were as follows:

Changed usage of fork() to vfork() to improve performance.

If a nfsid takes place and a host does not have a Kerberos Principal, print a warning message instead of blowing up.

All filesystem types now can attach a filesystem that is already mounted. Improved checking of this for NFS filesystems, with the use of host_compare(). Upon detach of any filesystem type, if the PERMANENT flag is set, the unmount will not happen.

Changed NFS self mount code to use host_compare(), which actually works.

Added declaration for path_canon() in attach.h.

Added "detach -host", which detaches all filesystems from a specified host.

Moved subroutines in util.c around; placed explicit parsing routines into the filesystem modules themselves. Created attachtab.c, which contains the attachtab i/o code. Also added host_compare() in util.c, which checks to see if two hostnames refer to the same host.

Don't allow NFS mounts where server == client unless the -override
option is given. This is so that an unprivileged user cannot perform this hazardous operation which may very well hang the system.

Don't print status messages for afs filesystems if the -p option is specified. Make sure it doesn't say it's authenticating an already mounted afs filesystem unless it really is.

When computing the default mountpoint for NFS filesystems, truncate the hostname at the first '.', it it exists.

Incorporated John Kohl's changes to make attach support Ultrix.

AFS attaches now pay attention to the -zephyr and -nozephyr flags. (Previously, they always did zephyr subscriptions.)

The default value for aklog has been changed to
/afs/athena.mit.edu/service/aklog.

If aklog is not found, the correct filename is reported in the error
message.

/bin/athena/attach
/bin/athena/\{detach,nfsid\} symlink made relative
/etc/athena/nfsid removed
/usr/include/attach.h removed

E. Kerberos

We have updated the Kerberos code (ver. ???) so that we now use the code that we distribute. This required a change in many libraries and executables:

```
(srvtabs for discuss & /etc/srvtab converted during update)
/bin/login
/etc/athena/xdm/xlogin
/bin/rcp
/etc/inetd.conf (rkinitd, erlogin, eklogin)
/etc/krb.conf NEAR.NET, CATS.UCSC.EDU)
/etc/krb.realms MIT.EDU added
/usr/athena/rkinit (new)
/usr/ucb/rlogin
/usr/ucb/rsh
/usr/athena/kdestroy
        kinit
        klist
        kpasswd (new)
        ksrvtgt
        ksrvutil (new)
        erlogin
        kadmin (new)
        ksu
        /usr/new/mh*
        /usr/athena/finger
        /usr/athena/tcom
        /usr/athena/tftp
        /etc/tftpd
        /usr/athena/lib/gnuemacs/etc/movemail
```

E.1. New lint libraries for kerberos
There were no lint libraries installed fro the previous version

```
/usr/lib/lint/llib-ldes.ln
    lib/lint/llib-lkadm.ln
    lib/lint/llib-lkdb.ln
    lib/lint/llib-lknet.ln
    lib/lint/llib-lkrb.ln
```

E.2. Libraries Affected by Kerberos Change
The following libraries were updated:
```
/usr/athena/lib/libacl.a
        /usr/athena/lib/libacl_p.a (new - profiling lib installed)
        /usr/athena/lib/libdes.a
        /usr/athena/lib/libdes_p.a (new)
          /usr/etc/erlogind (new)
          /usr/etc/ext_srvtab
          /usr/etc/kadmind (new)
          /usr/etc/kdb_\{destroy,edit,init,util\}
          / usr/etc/kerberos (new)
          /usr/etc/klogind
          /usr/etc/knetd
```

/usr/etc/kprop (new)
/usr/etc/kpropd (new)
/usr/etc/kshd
/usr/etc/kstash
/usr/etc/login.erl
/usr/etc//login.krb

E.3. Header Files
The following header files are now available with Kerberos:
/usr/include/des.h
    kadm.h (new)
    kadm_err.h (new)
    krb.h
    krb_err.h (new)
    rkinit.h (new)
    rkinit_err.h (new)

Removed : /usr/include/des_conf.h

E.4 New Kerberos Libraries
/usr/athena/lib/libkadm.a
        libkadm_p.a
        libkdb.a
        libkdb_p.a
        libknet_p.a
        libkrb_p.a

E.5 Discuss
The following Discuss-related files were affected by the the Kerberos update:
    /usr/athena/create_mtg_dir
    /usr/athena/crmtgs
        discuss
        dsmail
        dspipe
        mkds
        pmtg
        rmds
    /usr/etc/discussd
    /usr/etc/disserve
    /usr/athena/lib/discuss/*
    /usr/athena/lib/libdsk.a
    /usr/athena/lib/libdsk_p.a

E.6 rkinit
Remote kinit (rkinit) is a program that allows users to establish Kerberos tickets on a remote host or realm without having to type a password over a network connection. The rkinit system includes the following files:

/etc/athena/rkinitd Added (new program to set krb tickets remote)
/etc/services rkinitd added
/usr/athena/lib/librkinit.a (new)

/usr/athena/rkinit
/etc/athena/rkinitd
/usr/athena/lib/librkinit.a
/usr/include/rkinit.h
/usr/include/rkinit_err.h
/usr/man/man1/rkinit.1
/usr/man/man8/rkinitd.8
/usr/man/man3/rkinit.3

E.7 Updated Libraries

/usr/athena/lib/libknet.a
    /usr/athena/lib/libkrb.a

F. Dynamic IP Address Facility

We have added the ability to dynamically assign IP addresses & name service to workstations. At the moment, we only use this capability for installations. The files that were affected by this were:
    /etc/athena/netconfig
    /etc/rc.net & partially named

G. Moira

Among the changes made to the Moira services management system include:

The hash table routines in the library now work with negative keys.

The menu routines have been moved from the library to the moira directory.

afs.incr used to make erroneous reports about not creating filesystem because it didn't check the autocreate flag.

Moira client didn't handle wildcards in filesystem name for quotas when AFS support was first added.

Making a list administrator of type KERBEROS did not cause the principal to get added to the strings table.

All client-side code now compiles on SunOS 4.0.

sms_proto.h used to define SMS_GDB_SERV which is still used some places (notably rpc/sms_connect.c) instead of SMS_SERVER from sms_app.h. This has been fixed.

Displaying a user's quota in the moira client didn't show the modification information.

In the client, Delete_list could coredump because SlipInNewName was
not copying the NULL at the end of the blanche.

The blanche usage message claimed ''-info'' is a valid argument, but
it really wanted ''-information''. Now it takes ''-info''.

```
/etc/sms_untar
/usr/athena/chfn
/usr/athena/chpobox
/usr/athena/chsh
/usr/athena/mailmaint
/usr/athena/moira
/usr/athena/mrcheck
/usr/athena/lib/libsms.a
/usr/athena/lib/libsmsgdb.a
/usr/athena/lib/libsmsgdb_p.a
/usr/athena/lib/lint/llib-lsms.ln
/usr/athena/lib/lint/llib-lsmsgdb.ln
/usr/etc/smstest
/usr/etc/update_server
/usr/include/sms.h
/usr/include/sms_app.h
/usr/include/sms_et.h
```

H. Simple Network Management Protocol support

There is a new SNMP server program running on all workstations which is intended to
provide machine information when polled.

Added to workstation root:
/etc/snmpd, /etc/snmpd.conf
/etc/rc.conf SNMP variable added

J. C libraries (sprintf) & headers
Libraries recompiled & reinstalled

J.1. Major Changes

Library routines relating to *rpc* have been changed. See the section on rpc for details.

4.8 bind resolver

sprintf now returns int instead of char *. **Anything that depends on** *sprintf* **returning a
value is going to need to be changed.**

J.2 Header files
All header files were reinstalled.
errno.h - added definitions of errno, sys_errlist[], and sys_nerr.
stdio.h - declaration for sprintf to ensure users find out about the type change
/usr/include/cursors removed (X10)
/usr/include/idl removed (was a symlink to /site/usr/include/idl

/usr/include/lisp removed with franz lisp
/usr/include/{rescan.h, resscan.h} - removed
*/usr/include/userinfod/** - removed

J.3 Installed from BSD-NETWORK code

/usr/include/arpa/*
/usr/include/netdb.h
/usr/include/protocols/*.h
/usr/include/resolv.h
/usr/include/sys_exits.h

See RPC below and Kerberos above
/lib/libc{,_p}.a --> C lib. and profiled C lib.
/lib/{g,m,}crt0.o

K. Lint libraries

Reinstalled: *curses, dbm, m, mp, plot, termcap, port*

/usr/lib/lint/llib-lc{,.ln}: Corrected mount entry and sprintf
(See hesiod & zephyr)
/usr/lib/lint/llib-lacl.ln - installed proper place
/usr/lib/lint/llib-lcom_err.ln - installed

M. Latex

New fonts
The following new fonts have been installed:

/usr/athena/lib/tex/fonts/euex10.300pk

euex10.329pk e	uex10.360pk	euex10.tfm
euex9.300pk	euex9.329pk	euex9.360pk
euex9.tfm	eufb10.300pk	eufb10.329pk
eufb10.360pk	eufb10.tfm	eufb5.300pk
eufb5.329pk	eufb5.360pk	eufb5.tfm
eufb7.300pk	eufb7.329pk	eufb7.360pk
eufb7.tfm	eufm10.300pk	eufm10.329pk
eufm10.360pk	eufm10.tfm	eufm5.300pk
eufm5.329pk	eufm5.360pk	eufm5.tfm
eufm7.300pk	eufm7.329pk	eufm7.360pk
eufm7.tfm	eurb10.3a00pk	eurb10.329pk
eurb10.360pk	eurb10.tafm	eurb5.300pk
eurb5.329pk	eurb5.360pk	eurb5.tfm
eurb7.300pk	eurb7.329pk	eurb7.360pk
eurb7.tfm	eurm10.300pk	eurm10.329pk
eurm10.360pk	eurm10.tfm	eurm5.300pk
eurm5.329pk	eurm5.360pk	eurm5.tfm

eurm7.300pk	eurm7.329pk	eurm7.360pk
eurm7.tfm	eusb10.300pk	eusb10.329pk
eusb10.360pk	eusb10.tfm	eusb5.300pk
eusb5.329pk	eusb5.360pk	eusb5.tfm
eusb7.300pk	eusb7.329pk	eusb7.360pk
eusb7.tfm	eusm10.300pk	eusm10.329pk
eusm10.360pk	eusm10.tfm	eusm5.300pk
eusm5.329pk	eusm5.360pk	eusm5.tfm
eusm7.300pk	eusm7.329pk	eusm7.360pk
eusm7.tfm	msxm10.tfm	msxm5.tfm
msxm6.tfm	msxm7.tfm	msym8.tfm
msxm9.tfm	msym10.tfm	msym5.tfm
msym6.tfm	msym7.tfm	msym8.tfm
msym9.tfm	t-ita.tfm	t-rom.tfm
Euler.pk300w	MF79.pk300w	README.mfonts
TeXPSfonts.map	/ usr/athena/lib/tex/macros/newcen.sty	
/usr/athena/lib/tex/ps/dvi.ps		

N. X servers

Many bugs in the X server have been fixed. Among these are:

Broken compiler in arc code
(on RT) fix to last line redisplay on screen
Xqdss modified to work on color pvax (some bug fixes) Also has LCS
fixes.
/etc/athena/activate - */tmp/Xbin* hack not used anymore (new dotfiles in 6.3B allowed removal as xswitch to handle it)
X11R3 compatibiility links have been removed. (all links in */usr/lib/X11/fonts/**)
This was to provide 6.0R compatibility when we went to 6.2A last June.
Xibm - removed AED support from server

P. POP

Many bugs POP have been fixed. Among these are:

No longer uses *knetd*
zmailnotify modified
/usr/lib/mailstats (new)
/usr/lib/mconnect (new)
/usr/lib/praliases (new)

Q. OLC

The current version of OLC is 2.2.E.

OLC has been moved out of the consult locker and into the standard release.

xolc is an experimental X based olc. It is a script that attaches the xolc locker and runs xolc.

etc/athena/olcd - recompiled with new kerberos
olc/olcr from the consult locker - binary only

All related files have been re-installed.

R. RPC

Warning: Changes made to *rpc* require that all clients on a machine be update when a new kernal is installed. All programs that interface to the kernel needed to be recompiled when the data structures changed size.

> /etc/mount
> /etc/rpcd
> /etc/umount
> /usr/etc/mkcred
> /usr/etc/nfsc
> /usr/etc/rpc.mountd
> /usr/etc/rpc.rquotad
> /usr/etc/rpcinfo
> /usr/etc/showmount

The following header files have been changed:

> /usr/include/rpc/auth.h
>> clnt.h
>> pmap_clnt.h
>> pmap_prot.h
>> rpc.h
>> rpc_msg.h
>> svc_auth.h
>> types.h
>> xdr.h

S. New Programs
The following new programs have been added in this release:

/etc/bootpd - for netboot
/usr/athena/xprint - graphical interface for printing files
/usr/lib/X11/bitmaps.
/usr/athena/xolc - **experimental**: shell script to attach a run a Motif version of olc.
/usr/bin/mkdep - The berkley version which has been basterdized to   run make depend.

T. Kermit
Kermit was updated to run version 4E (Jan 89) instead of 4C from 1986. This version contains many bug fixes and represents signifigant improvement in performance.

Major bug fixes from version 4D:
Loss of trailing control characters at end of file when sending.
2-character checksum now works with 8-bit binary files.
Background/take-file interaction fixed (maybe?).
Insertion of spurious CRLF at position 4096 when doing 'kermit -k'.
Parsing of multine 'get' command (again).

U. Palladium

Although full support of Palladium has been backed out of this release due to instability, the following pieces have been put into place:

usr/athena/lib/Pd/*
/usr/athena/pd*