

# SAGE II SYSTEM RELEASE NOTES

September 1982

The System Release Notes present information which is subject to change or specific to a shipment. The directories of the distribution diskettes are presented here along with a growing set of information on Terminal configuration files. Also contained in the System Release Notes is a list of problems and restrictions which are currently outstanding in the software.

## DISKETTE FILES:

The files for 80 track (96 TPI) systems are contained on two diskettes called SYSTEM: and UTILITY:. The diskette SYSTEM: is bootable on the SAGE II computer. It contains all the critical files for running the UCSD p-System. The diskette UTILITY: contains p-System utility files as well as other SAGE provided software.

For 40 track (48 TPI) systems, the bootable diskette is also called SYSTEM:. The less critical system files are contained on the diskette called UTIL1:. The remaining utilities and SAGE provided software are contained on the diskette UTIL2:.

## Directories for 80 track distribution.

### SYSTEM:

SYSTEM.PASCAL	119	13-Jun-82	10	512	Datafile
SYSTEM.MISCINFO	1	1-Sep-82	129	226	Datafile
USERLIB.TEXT	4	13-Sep-82	130	512	Textfile
SYSTEM.LIBRARY	7	13-Sep-82	134	512	Datafile
SYSTEM.SYNTAX	14	18-May-82	141	512	Textfile
SYSTEM.FILER	38	27-May-82	155	512	Codefile
SYSTEM.EDITOR	47	7-Jun-82	193	512	Codefile
SYSTEM.COMPILER	108	7-Apr-82	240	512	Codefile
SETUP.CODE	36	14-Apr-82	348	512	Codefile
SAGEUTIL.CODE	46	8-Sep-82	384	512	Codefile
LIBRARY.CODE	13	1-Apr-82	430	512	Codefile
SAGEDATE.CODE	5	30-Aug-82	443	512	Codefile
ENDBOOT	1	13-Sep-82	448	512	Datafile
SYSTEM.BIOS	20	13-Sep-82	449	512	Codefile
SYSTEM.INTERP	20	13-Sep-82	469	512	Codefile
SAGETOOLS.CODE	51	13-Sep-82	489	512	Codefile
YALOE.CODE	12	22-Apr-82	540	512	Codefile
SAMPLEGOTO.TEXT	6	17-Jul-82	552	512	Textfile
SCREENOPS.CODE	8	26-Apr-82	558	512	Codefile
SCREENTEST.CODE	13	27-May-82	566	512	Codefile
COPYDUPDIR.CODE	3	7-Apr-82	579	512	Codefile

**SYSTEM:..continued. ( or UTIL: on 40 track diskettes)**

SYSTEM.ASSMBLER	56	18-May-82	582	512	Codefile
68000.OPCODES	4	18-Jan-82	638	120	Datafile
68000.ERRORS	9	18-Jan-82	642	272	Datafile
SYSTEM.LINKER	27	1-Apr-82	651	512	Codefile
DECODE.CODE	28	1-Apr-82	678	512	Codefile
PATCH.CODE	39	18-May-82	706	512	Codefile
XREF.CODE	28	1-Apr-82	745	512	Codefile
COMPRESS.CODE	10	24-May-82	773	512	Codefile
REALCONV.CODE	4	25-Mar-82	783	512	Codefile
MARKDUPDIR.CODE	4	7-Apr-82	787	512	Codefile
BOOTER.CODE	3	18-May-82	791	512	Codefile
INTERP.0.CODE	17	13-Sep-82	794	512	Codefile
INTERP.2.CODE	20	13-Sep-82	811	512	Codefile
INTERP.4.CODE	22	13-Sep-82	831	512	Codefile
REALOPS.2.CODE	10	1-Apr-82	853	512	Codefile
REALOPS.4.CODE	12	1-Apr-82	863	512	Codefile
ANSI.CODE	14	7-Jun-82	875	512	Codefile
ANSIGOTOXY.CODE	3	1-Apr-82	889	512	Codefile
ANSI.MISCINFO	1	1-Sep-82	892	226	Datafile
VT52.MISCINFO	1	31-Aug-82	893	226	Datafile
VT52.GOTO.CODE	3	31-Aug-82	894	512	Codefile
TV925.GOTO.CODE	3	16-Aug-82	897	512	Codefile
TV925.MISCINFO	1	1-Sep-82	900	226	Datafile
H19.MISCINFO	1	1-Sep-82	901	226	Datafile
IQ120.MISCINFO	1	7-Sep-82	902	226	Datafile
TV912.MISCINFO	1	7-Sep-82	903	226	Datafile
COMMANDIO.CODE	3	26-Apr-82	904	512	Codefile
DIR.INFO.CODE	18	1-Apr-82	907	512	Codefile
DISKCHANGE.CODE	8	18-May-82	925	512	Codefile
DISKSIZE.CODE	3	18-May-82	933	512	Codefile
ERRORHANDL.CODE	3	27-May-82	936	512	Codefile
FILE.INFO.CODE	7	1-Apr-82	939	512	Codefile
FINDPARAMS.CODE	9	7-Apr-82	946	512	Codefile
RECOVER.G.CODE	8	7-Apr-82	955	512	Codefile
SYS.INFO.CODE	5	1-Apr-82	963	512	Codefile
WILD.CODE	6	1-Apr-82	968	512	Codefile
KERNEL.CODE	30	26-Apr-82	974	512	Codefile
SAGE.PBOOT.CODE	4	17-Aug-82	1004	512	Codefile
SAGE.PBOOT.TEXT	38	17-Aug-82	1008	512	Textfile
< UNUSED >	234		1046		

60/60 files<listed/in-dir>, 1046 blocks used, 234 unused,  
234 in largest

**UTILITY: (or UTIL2: on 40 track diskettes)**

IB.EX.CODE	2	13-Sep-82	15	512	Codefile
IB.LNK.CODE	9	13-Sep-82	17	512	Codefile
IB.UNIT.CODE	8	13-Sep-82	26	512	Codefile
IB.UNIT.TEXT	18	13-Sep-82	34	512	Textfile
IB.EX.TEXT	8	13-Sep-82	52	512	Textfile
IB.DEF.TEXT	16	13-Sep-82	60	512	Textfile
RECEIVE.CODE	3	16-Jul-82	76	512	Codefile
REMINTEST.CODE	2	16-Jul-82	79	512	Codefile
REMOUTTEST.CODE	2	16-Jul-82	81	512	Codefile
REMTALK.CODE	6	18-May-82	83	512	Codefile
SEND.CODE	3	16-Jul-82	89	512	Codefile
TEXTIN.CODE	6	16-Jul-82	92	512	Codefile
RECEIVE.TEXT	8	16-Jul-82	98	512	Textfile
REMINTEST.TEXT	4	16-Jul-82	106	512	Textfile
REMOUTTEST.TEXT	4	16-Jul-82	110	512	Textfile
SEND.TEXT	6	16-Jul-82	114	512	Textfile
TEXTIN.TEXT	14	16-Jul-82	120	512	Textfile
FORTTRAN2.CODE	87	14-Jun-82	134	512	Codefile
FORTTRAN4.CODE	87	14-Jun-82	221	512	Codefile
FORTLIB2.CODE	21	16-Jun-82	308	512	Codefile
FORTLIB4.CODE	21	16-Jun-82	329	512	Codefile
BLIB.R2.CODE	38	27-Jan-82	350	512	Codefile
BLIB.R4.CODE	38	27-Jan-82	388	512	Codefile
BASIC.R4.CODE	78	28-Jan-82	426	512	Codefile
BASIC.R2.CODE	77	27-Jan-82	504	512	Codefile
REMTALK.TEXT	18	18-May-82	581	512	Textfile
IB.BUS.TEXT	40	13-Sep-82	599	512	Textfile
< UNUSED >	641		639		

28/28 files<listed/in-dir>, 639 blocks used, 641 unused,  
641 in largest

## TERMINAL CONFIGURATION FILES:

The following preconfigured files may be used to configure the p-System for the specified terminals. The key assignments for these terminals are also presented in tables.

Terminal:	change file to SYSTEM.MISCINFO	install GOTOXY in SYSTEM.PASCAL
TeleVideo 925/950	TV925.MISCINFO	TV925.GOTO.CODE
TeleVideo 912C/920C	TV912.MISCINFO	TV925.GOTO.CODE
DEC VT52	VT52.MISCINFO	VT52.GOTO.CODE
ANSI Standard Term (DEC VT100 series)	ANSI.MISCINFO (note also that ANSI.CODE must be installed in SYSTEM.PASCAL to replace the existing SCREENOPS routines)	ANSIGOTOXY.CODE
Heath H19	H19.MISCINFO	VT52.GOTO.CODE
SOROC IQ120	IQ120.MISCINFO	TV925.GOTO.CODE

## KEYBOARD ASSIGNMENTS:

Terminals:	TV912C,TV920C TV925,TV950:	ANSI Standard: (VT 100 series)
EDITOR ACCEPT KEY	Ctrl C	Ctrl C
EDITOR ESCAPE KEY	ESC ESC	ESC ESC
EDITOR EXCHANGE - DELETE KEY	CHAR DELETE	Ctrl D
EDITOR EXCHANGE - INSERT KEY	CHAR INSERT	Ctrl E
KEY FOR BREAK	Ctrl @	NUL (see note 1)
KEY FOR FLUSH	Ctrl F	Ctrl F
KEY FOR STOP	Ctrl S	Ctrl S
KEY TO ALPHA LOCK	Ctrl R	Ctrl R
KEY TO DELETE CHARACTER	BACKSPACE	BACKSPACE
KEY TO DELETE LINE	DEL	DELETE
KEY TO END FILE	Ctrl C	Ctrl C
KEY TO MOVE CURSOR DOWN	down arrow	down arrow
KEY TO MOVE CURSOR LEFT	left arrow	left arrow
KEY TO MOVE CURSOR RIGHT	right arrow	right arrow
KEY TO MOVE CURSOR UP	up arrow	up arrow

Note 1: Determine which key will generate the NUL ASCII value. On the VT102 this is Ctrl space. On some terminals this is Ctrl @. This may be changed with SETUP.

Terminals:

VT52:

Heath H19  
(Note 2)

EDITOR ACCEPT KEY	Ctrl C	Ctrl C
EDITOR ESCAPE KEY	ESC ESC	ESC ESC
EDITOR EXCHANGE - DELETE KEY	Ctrl D	Ctrl D
EDITOR EXCHANGE - INSERT KEY	Ctrl E	Ctrl E
KEY FOR BREAK	Ctrl space	Ctrl @
KEY FOR FLUSH	Ctrl F	Ctrl F
KEY FOR STOP	Ctrl S	Ctrl S
KEY TO ALPHA LOCK	Ctrl R	Ctrl R
KEY TO DELETE CHARACTER	BACKSPACE	BACKSPACE
KEY TO DELETE LINE	DELETE	DELETE
KEY TO END FILE	Ctrl C	Ctrl C
KEY TO MOVE CURSOR DOWN	down arrow	down arrow
KEY TO MOVE CURSOR LEFT	left arrow	left arrow
KEY TO MOVE CURSOR RIGHT	right arrow	right arrow
KEY TO MOVE CURSOR UP	up arrow	up arrow

Note 2: Consider using the Keypad Shifted option so that the shift key is not necessary when using the arrow keys.

Terminals:

IQ120:

EDITOR ACCEPT KEY	Ctrl C
EDITOR ESCAPE KEY	ESC
EDITOR EXCHANGE - DELETE KEY	Ctrl D
EDITOR EXCHANGE - INSERT KEY	Ctrl E
KEY FOR BREAK	Ctrl underline
KEY FOR FLUSH	Ctrl F
KEY FOR STOP	Ctrl S
KEY TO ALPHA LOCK	Ctrl R
KEY TO DELETE CHARACTER	BACKSPACE
KEY TO DELETE LINE	DELETE
KEY TO END FILE	Ctrl C
KEY TO MOVE CURSOR DOWN	down arrow
KEY TO MOVE CURSOR LEFT	left arrow
KEY TO MOVE CURSOR RIGHT	right arrow
KEY TO MOVE CURSOR UP	up arrow

## **CURRENT UCSD P-SYSTEM BUGS:**

During final checkout several bugs with p-System Software were found which have not yet been corrected. SAGE will make available the corrections to these problems as soon as solutions have been developed or fixes are made available from Softech Microsystems.

1. 68000 Assembler sometimes generates bad code file.

The 68000 assembler generates a bad code file format when the code exactly fills a two block area. The symptom is the output of a 'Bad Procedure Dictionary' message by the Linker. The problem may be temporarily overcome by adding an extra word of code to avoid the exact boundry condition.

2. 68000 Assembler generates bad relocation information.

In the case where a value is formed containing the difference between two program labels, the value should be absolute no matter where the code is placed. The assembler generates erroneous relocation information indicating that the value should be modified when the program is loaded by the p-System Interpreter. The value generated in the actual code area is correct so the BIOS or other non-Linked and Compressed programs will never see the problem. The problem is only experienced by programs which are Linked and loaded with p-code or are Compressed (for pure stand alone application).

3. 68000 Assembler problems with .ABSOLUTE directive.

The .ABSOLUTE directive should be avoided with the 68000 version Assembler. All normal program counter relative addresses (program labels) are treated as absolute values which causes problems with Branch instructions and other instructions which assemble differently with absolute vs relative addressing.

4. YALOE causes Stack Overflow in Extended Memory system.

The non screen oriented editor, YALOE, causes a Stack Overflow when reading in a file in the normal SAGE II Extended Memory (separate code and data) environment. If YALOE must be used, the SETUP program may be used to configure a SYSTEM.MISCINFO which will boot up with a non Extended Memory environment. This is done by setting the Code Pool Address (high and low parts) to zero as well as setting the Has Extended Memory field to FALSE.

5. {\$D+} compiler option causes Backend Error 30.

The current Pascal compiler causes an error during the second pass when used with the {\$D+} option for symbolic debugging.

6. Long files cause the Editor to crash.

Reading in a long file (>66 blocks) will crash the screen Editor.

7. Problems with Adventure program in USUS distribution.

The Adventure program in the USUS Library has two problems when used on a SAGE II system. The first seems to be a recent change to the operating system which does not handle the end of file condition properly. It causes an error "Ring Buffer Overflow" when reading in the data files for the Adventure initialization program. The error may be avoided by removing the last carriage return at the end of each of the textual data files.

The second problem is actually a bug in the Adventure program which did not show up in pre-version IV systems. Unfortunately it causes various Exception errors (Address Errors, Bus Errors, and even RAM Parity errors). The program defines two records (ARYS & VARYS) on the heap and then reads data into them with a BLOCKREAD. The amount of data read exceeds the size of the records thus overwriting something in the Heap area beyond the allocated records. In older versions of the p-System the Heap had a simpler allocation and nothing of value was ever overwritten. The solution is to allocate more room in the two records and revise the calculation for the amount of data read into the records.

8. BOOTER transfers all of first track.

The p-System utility routine BOOTER transfers all of the first track (8 blocks) instead of the first two blocks thus wiping out the previous directory. For the SAGE II, the SAGEUTIL program should be used for transferring bootstraps.

9. Update required to final Version IV.1 files.

Softech has not provided a final release of the Version IV.1 system. When this release is received SAGE will update your system with the final files. Also the Print Spooler, currently missing from the distribution, will be provided.