PrintScreen

Vol. XIV July 1996 No. 7

Newsletter of the Stanford / Palo Alto Users Group for PC

A Non-Profit / Educational Organization

Words from the Prez

Bob Mitchell

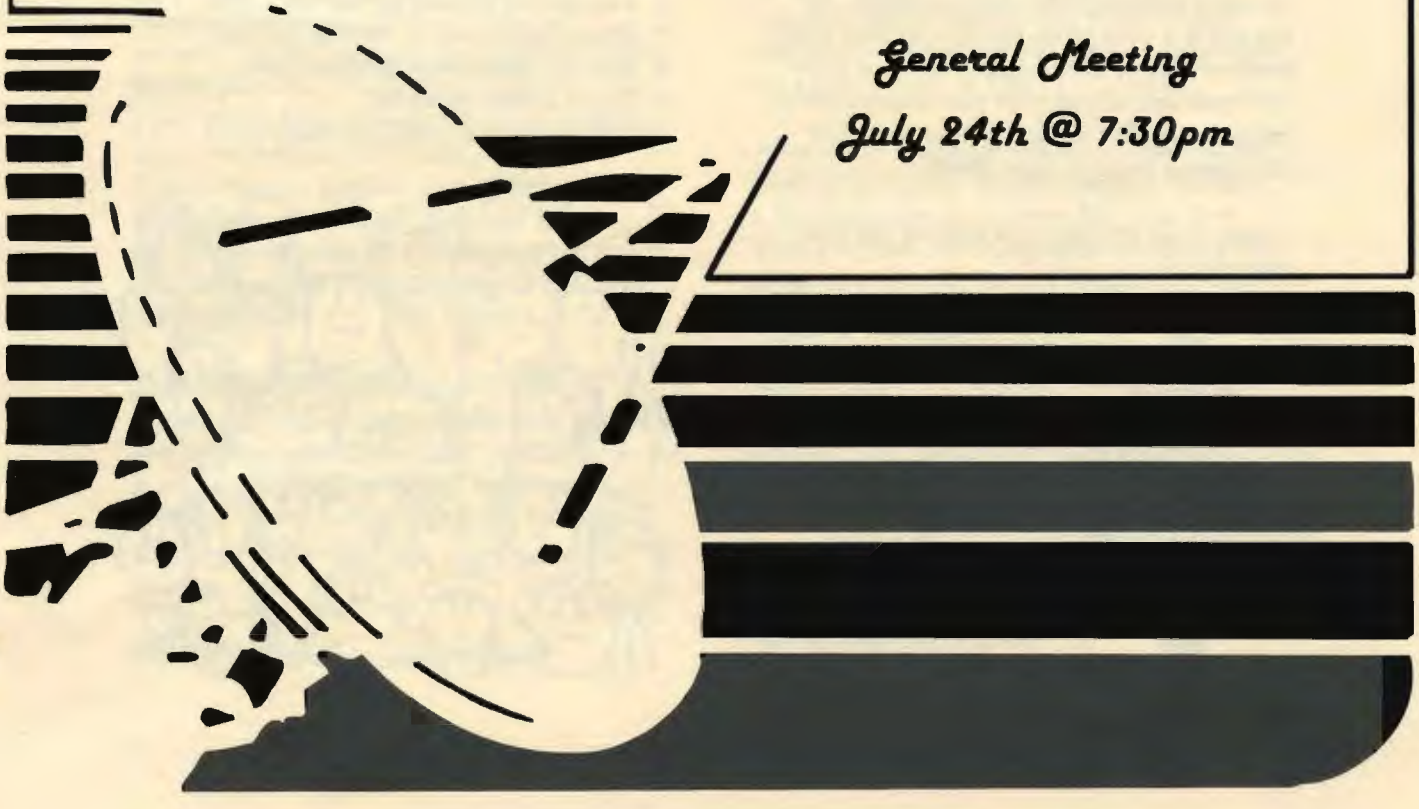
Well we have had our first meeting at our new location at EPRI. There was an immediate improvement in attendance with around 35 people. That's based on counting the number of cookies that were taken from the plate and dividing by 3. Very scientific. The facilities worked just fine except for Kendric Smith's Mac Laptop that he was going to use to demo the Web Page, but of course what can you expect...it was after all a M--. There were no significant complaints about not being able to hear the speakers (so long as they were at the podium). The projection screen was large enough for all to see and the demo of REMOVE IT and a new application that hasn't even been released yet called FIX IT. We were one of the first to see it. It was claimed to offer what FIRST AID offers, but this one works. We will have an evaluation copy and verify the claims.

At first glance it looks good.

Based on the newsletters we get from a number of other User Groups and a publication called User Group Connection, a UG cannot attain total success unless there are at least some SIGs (Special Interest Group). This gives the members a real opportunity to learn in an atmosphere that allows much more time for questions and answers that cannot be attained in the limited time available in a regular UG meeting. We used to have a number of them. Based on suggestions that we get a group together to build a PC from scratch, and with donations of components offered by Jim Dinkey, Jim Bailey and Walter Varner, we now have a PC Builders SIG. There were 21 people who signed up for it. We will be getting to all of those who signed up to determine when and where to have it. It's a start!

Brian Christopher will be adding a few items to

(Continued on page 2)



General Meeting

July 24th @ 7:30pm

(Continued from page 1)

PrintScreen on a regular basis. You will see listings of local television and radio programming on the subject of computers, listings of raffle winners and the minutes of all meetings. We do want to keep you informed on just what is going on. If you fancy yourself as a writer and you have something to write about that will be of interest to the group, do so, then E-Mail it to Brian. You may want to check with him first to see what his needs are in upcoming publications.

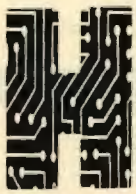
We also want to reestablish the practice of having numbers of our members evaluating new software. This provides those interested with free software. Well, not really free, we do expect you to provide an evaluation that will then appear in PrintScreen. More about that at upcoming meetings.

Now that we have a good location we want to encourage everyone to bring a friend to the meetings, and if the friends like what they see, encourage the to join the group. We may even come up with an incentive to sign up new members. Also if you have friends whose membership may have lapsed, encourage them to return to the fold. We also want to hear comments from guests as well as members on likes and dislikes of the meeting format. In the end it is your group and you do have some responsibility to continually provide us with the input that tells us what your reasons are to remain a member and attend meetings. On this one the ball is in your court!

I hope to see you and your guest at the next meeting. ✉

Supper With SPAUG - 6p.m.

Before the
General Meeting
Talbot's near
El Camino
463 California Ave.
Palo Alto
Table reserved for SPAUG



Hardware SIG

Jim Dinkey

The last 30 minutes of the next meeting will be taken up in hardware-oriented topics.

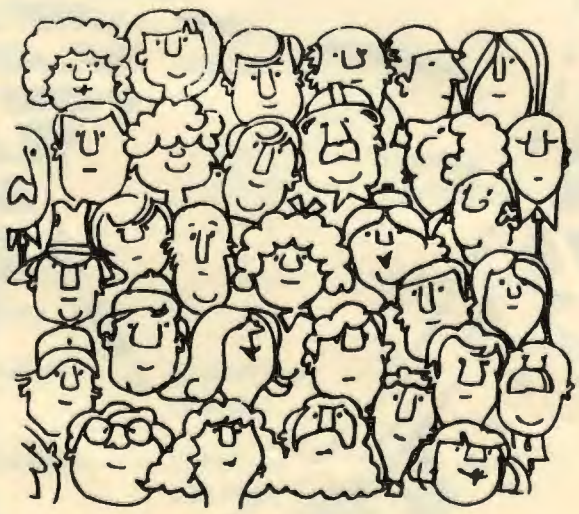
First, I will demonstrate three different hardware diagnostics:

1. QAPLUS
2. AMIDIAG
3. QEMM's entry

All of these are different and have different capabilities and sometimes different objectives. All of them will tell you the "health" of a system and, more importantly, will tell you if the machine is OK, not broken. If not broken, then it is software fix time.

Following that, I will try to do the following concerning the Hardware SIG:

1. Purchase a 486DX-100 motherboard ($115)
2. Purchase the 486DX-100 ($36)
3. Purchase the fan ($6)
4. Purchase a portable ESD sheet
   (if not Redwood City)
5. Set a meeting date & time.
6. Pass out the booklet for the 486 board.
7. Try for consensus on parts in the box.
8. Pass out inventory of available parts.
9. Try to answer questions.
10. Pass baton to anyone that wants it. ✉



General Meeting Minutes
June 26, 1996

Bob Mitchell

This was the first meeting of SPAUG at its new EPRI location. With the general instructions in Print Screen, on the Web Page and a number of sign posts leading to the location, everyone seemed to find the location with ease. The facilities at EPRI were most ideal. The projection system worked well with two different PCs but did have a glitch with a MAC laptop that was to have been used to demo the Internet. That will be resolved for any future meetings should we need the use of a MAC for special presentations. The built in sound system at the podium with a feed to several room speakers seemed to work very well.

In response to a request for a favored end time of meetings, the consensus of the membership present (approximately 40 people) felt that 9:30 PM was an acceptable time.

Random Access included a suggestion from Jim Dinkey that he would be willing to contribute many components toward the building of a SPAUG group computer. This building of a computer was touched on at the previous meeting, and the offer of components has turned an idea into an actuality. At the suggestion we establish a SIG for this purpose, 21 individuals signed up to be a part of this SIG. Lamont Shadowens offered a location at his office for this project. Considering the number of members interested in this project, there may be a space problem and it may be necessary to consider a second choice of location with more available room.

At the request of a representative of Key Tronics a brief questionnaire was filled out by all members present which will result in the contribution of a Key Tronics keyboard to SPAUG. This timely contribution may very well be a welcome addition to our computer building SIG.

Mr. Elliot Lowe, the vice president of marketing for Vertisoft was our guest speaker for the evening. He demonstrated the latest version of Vertisoft's uninstaller program, REMOVE IT. He pointed out that the latest version of this application includes programming information of the install programming of several thousand applications, allowing it to "know" exactly how the applications in your computer have been installed without having logged those applications during your installation process. This answered a few questions to decision making problems faced when the usual uninstaller program gives you a choice of what to eliminate. He also offered a new application that is due to hit the market in July. It is called FIX IT. It was claimed that FIX IT will go far beyond the type of existing programs such as FIRST AID that according to some reviews does not always prevent crashes caused by FAT and DMA conflicts. Vertisoft will be supplying us with a copy of that program which we will evaluate and review for a later version of PRINT SCREEN.

After a brief recess for coffee and cookies, the Disk of the Month (DOM) segment included a demonstration of the latest McAffee Anti Virus program. All DOM disks containing this program were sold. Robert Mitchell will have more available for the next meeting

Kendric Smith was scheduled to do a demo on accessing the Internet and displaying the SPAUG Web Page, however the overhead projection system would not accommodate his MAC laptop. Apparently some prejudice there on the part of the system. You may be assured however that it will work the next time.

The meeting ended at 9:30. ✉

Staff & Planning Meeting
July 3, 1996

The meeting began at 7:30 pm at Beverly Altman's house. Present were: Bob Mitchell, President, Arlen Kertz, Vice President, Brian Christopher, Editor, Walter Varner, Accountant, Beverly Altman, Director-At-Large, Mildred Kohn, Secretary, and Members Jim Bailey, Jim Dinkey and John McFall.

Random Access was the first topic: too long at the last meeting because the guest was late in setting up his equipment. Should Random Access be at the beginning of the meeting? Yes, it is very important, said Walter Varner. The guest should be told to be ready to present at 8 pm. If members need to continue Random Access, the President will announce resumption later.

Many more members than usual attended our first meeting at EPRI. The DOMs were sold out, due both to the excellent selections Robert Mitchell made and to their presentation on our Home Page by Kendric Smith. Members are requested to consult our Home Page more often, and to submit contributions to it through Kendric.

Internet demonstrations are of increasing interest to our members.Jim Dinkey warned us that we can lose the group while waiting for things to appear on the Internet; we should have two modems available. It was pointed out however that we had access to only one telephone connection. Brian suggested members capture and make videos out of their Internet finds with Screen Cam or Snag It. This would eliminate the waiting.

Based on information received from Nancy Helmy, Bob advised the name of the person revising our constitution is Clark Moore. He will be contacted to get an update on the progress.

Lots of members have signed up to build a computer for our group. Lamont Shadowens has already volunteered a computer workroom in his office but there might be a problem with limited space for a large group.

The PrintScreen deadline is the 10th of the month, giving Brian time to get it into print and mailed so that members can receive it one week before the meeting.. Software review volunteers should be given a deadline for completing their reports. A map to EPRI will be published, and the restaurant where members can gather for dinner before the meeting will also be published.

Information contained in the Web Page was credited with bringing in our latest new member, Clyde Lerner.

Members are requested to sign in when they arrive and pick up their raffle tickets. The names of raffle winners will be published in PrintScreen.

Respectfully submitted,
Mildred Kohn, secretary

Staff & Planning Meeting
June 12, 1996

The meeting began shortly after 7:30 pm at Beverly Altman's home. Present were Bob Mitchell, Arlen Kurtz, Brian Christopher, Beverly Altman, Kendric Smith, Mildred Kohn.

The results of Bob Mitchell's survey were discussed. The response rate was high—almost 50%, but the remaining members will be encouraged to respond and a prize will be given for the most helpful one. We are looking forward to our first meeting at EPRI and its fine equipment. Lamott Shadoan will lend us both a laptop and a desktop as backup should other equipment fail. We are looking forward to the time when the disk of the month and other material from the members can be demonstrated instead of being just talked about. The order of events at meetings was discussed. The survey favored a 10 minute break in the middle of the meeting. Random Access will start at 7:30 sharp. The guest speaker will be notified to start at 8:00. Up to now the method has been to invite two guests since one often was a no-show. However, when they both showed up, they had to hurry through their presentations and there is no time for discussion or questions. We decided to invite only one guest and have a member of SPAUG ready with an alternative presentation. General meetings are to end at 9:30.

When we discussed our newsletter we decided the practice of listing the email addresses of every member who has one will be stopped. The addresses of the officers will be listed as well as additions and changes among the members. Members will be encouraged to read their mailing label for information regarding expiration of membership date. We discussed possibly rewarding those who bring in new members with an extension of their renewal date. The newsletter deadline is the 10th of the month so that it can get to the members 5 days before the meeting. A list of the files on the disk of the month should be published. Software reviews are a problem. From now on a record will be kept of who is handed software and each recipient will be given a deadline for turning in a review. The reviewer gets to keep the software as payment for effort.
The members of the staff do not recall the name of the attorney who is revising our constitution. Will someone out there wipe the egg off our face?

The meeting ended at 9:30 pm.

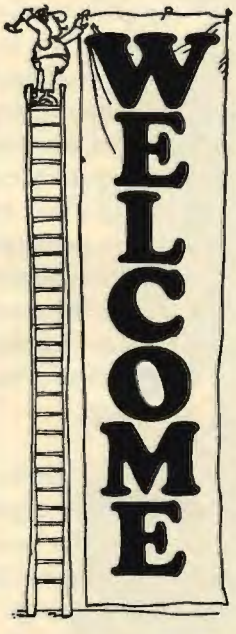
Respectfully submitted,
Mildred Kohn, secretary

New Member

Clyde Lerner

Renewing Members

Maynard Keeljian
Delbert & Donna Philpott
Norm Rossen
Bob Mitchell
Roger Flores
Sidney Gunther
Carol Liberato
John MacMurray
Robert Meltzer
Jim Powell
Burns Searfoss
Keith Smith



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Testing Hardware

Robert Mitchell - June 21, 1996

A little over two weeks ago, I received an E-mail message about a one day temporary job at PC-Worlds Test center in San Francisco. Kendric Smith received the original message from a guy named Jeffrey Kuta, if anyone in the club would be interested in going. The message specified the requirements in three different groups. One group was those who have never installed a peripheral of any kind. Group two was for those who installed only memory modules, video cards and HD/FLPY drives, but nothing else like sound cards, CPU Upgrades, etc. And group three was those who have never installed a peripheral with conflicts, which involve moving jumpers. The other requirements were some knowledge of Word 6 for Windows and Excel. The testing was to go between Friday, May 31 and June 7th. There was also a number to call if you met the requirements and were free for a whole day.

I called the number and Jeff asked me about my computer experience and if I have installed any computer components, as well as having used Word 6 and Excel. I was scheduled for Thursday the 6th. Once I was there, he took me to this small room with a table, chairs, computers, a video camera and intercom system. The one side of the wall had a one way see through window. The other room on the other side of this room housed a video control room. He could see and hear everything I was doing. My job was to test CPU Upgrade kits. The first of which were 486 to Pentium upgrades and the last was a Pentium Upgrade chip for a Pentium system. Once the camera rolled, I was on my own. I could talk to him if I needed to and he sometimes asked some questions as well. The idea was to see how easy it was to install the component. Things such as how easy is it to read the manual and understand it and if the machine starts without any trouble. This is called : "Usability". After running the specified tests on the three machines, I was asked to open up a couple of files and type up the specifics of the product as well the likes and dislikes of the products. This was phase one. After lunch I went to phase two. This was called the Black Box Test. There where three other machines that had these same Upgrade chips in them. He didnt tell me which one was with which Upgrade in it. He asked me to do certain tasks with each one, such as load a Excel spreadsheet into a Word document through an OLE link & also play DOOM for the graphics speed. How long did it take to do these tasks and to load programs and files. After trying out a machine he would ask me what do I think of the performance of the machine. Was one machine faster than the other. He also asked me to write up information about these different tasks in some files that had been written up before. The day lasted about 5 hours. One person, on each of these days did the same tests. All of this data is compiled and the article for the magazine is written accordingly . Either favoring these products or not favoring them. This is the way that reviews of products are done in these magazines. The whole idea behind these tests is to see if a person like me or anyone would spend the $300 or so and buy one of these products and be able to install it into our or their computer without any problem. There are products out there known to have problems and have terrible not so easy to read manuals. These such products are usually not recommended and should be avoided. I was asked not to discuss my findings with anyone, so I didnt tell anything about the exact findings, just the things that were done leading up to the findings. So find them out for yourself in the November Issue of PC-World.

All in all, I think the experience was worth the trip to San Francisco. I would do it again, if I were offered this opportunity again, even at Mac Worlds facilities. I was paid for my day at a rate of $15 dollars an hour for my service to them. I would recommend this opportunity to anyone interested in this type of work. I learned something new about how these reviews in these magazines are done. If you want to know other specifics of about it and the location of the facility, please send me an e-mail at RFMitch702@aol.com. ✉

Gardening on the 'Net

http://www.tusc.net/~mckinley/daylily/cultivations/
Cultivations' Daylily Corner
- information on daylilies, including: software, catalogs, screen savers, slide shows, helpful hints.

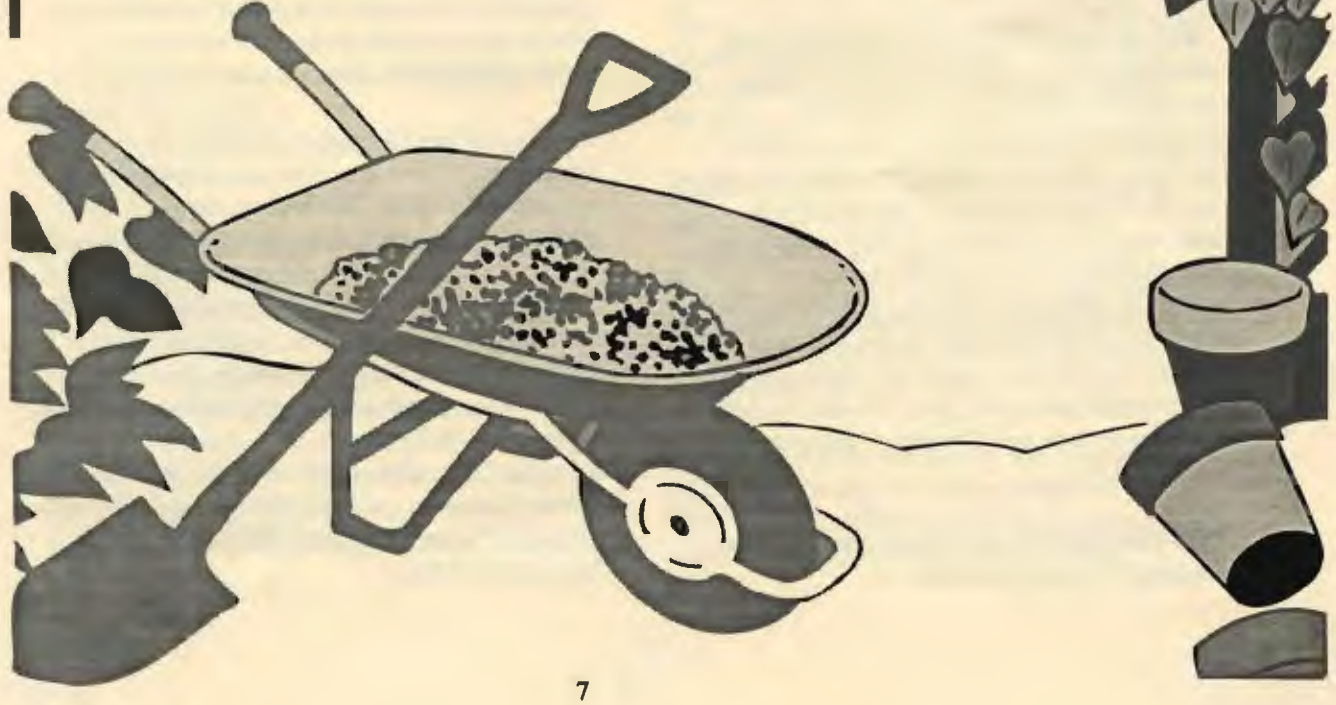
http://infoweb.magi.com/~moonowl/
Garden In Time
- flower garden design software

http://www.tiac.net/users/gwtech/gazebo_gardens/
Gazebo Gardens
- online encyclopedia of perennial gardening.

http://www.horticopia.com/desops/
Horticopia
- CD-ROMS featuring thousands of full color pictures and data for ornamental plants.

http://www.hortsoft.com/
HortSoft
- Publishers of the Ultimate Garden Tool, comprehensive gardening reference software available on CD.

http://www.plantcare2000.com/
PlantCare Information Systems, Inc
- See this site for ways to care for various plants and flowers. They provide software that gives details on how to care for 2000 different species.



ScreenCam Release 2.0

Lotus Development Corp.

ScreenCam is an interactive tool for creating ad hoc and formal audio/visual resentations. Users can capture screen activity, cursor movements and sound into an integrated file that can be saved and distributed across local and wide-area networks as well as the Internet. Addressing a wide range of business needs, ScreenCam is as easy to use as a VCR and provides a practical way for users to show and say exactly what they mean.

The new release includes significant enhancements, including captioning, sound compression, editing and Notes/FX integration. ScreenCam sound compression can reduce file size by as much as 50 percent, using algorithm technology from VocalTec, Inc. Soundless movies with ScreenCam captions can reduce file size by as much as 90 percent.

"ScreenCam 2.0 provides businesses of all sizes with added flexibility to customize sales, training and publishing applications that can be used again and again throughout an organization",said Steve Barlow, director of Lotus' Multimedia Products Group. ScreenCam sets the pace for Lotus Team Computing by leveraging the power to demonstrate and share ideas in action.

"With ScreenCam, businesses can easily and efficiently create show-and-tell ScreenCam screen movies to explain how a task is accomplished or demonstrate new products," said Jerry Michalski, managing editor, Release 1.0. With the new option of using captions instead of sound, businesses can now publish and distribute ScreenCam movies over a variety of mediums, including various on-line services and the Internet. In this way, not only is ScreenCam a useful in-house sales, training and publishing tool, it is also a robust application to share information beyond the enterprise.

New Functionality and Enhancements Offer Business-Practical Solutions

The new captioning capability of ScreenCam 2.0 offers users the option of creating either sound or captioned movies. The captions allow users to store up to 15 minutes of screen movies on a floppy disk. In the past, users were limited to sound movies that averaged 1 MB per minute.

ScreenCam Release 2.0 also features time-saving editing abilities. Users can revise their screen movies immediately, without having to re-record the whole segment. Additionally, users will find that the new sound compression capabilities can significantly reduce the file size of both sound and captioned movies, optimizing them for distribution via on-line networks and floppy disk storage.

ScreenCam 2.0 also features new Notes/FX integration which provides seamless Notes interoperability and the ability to build, archive and manage libraries of screen movies.

ScreenCam screen movies can be saved and distributed either as stand-alone executable files or as embedded OLE objects in any document. Screen movies can be sent to anyone on the network via Lotus Notes, Lotus cc:Mail, Microsoft Mail or Novell GroupWise. They also can be posted on e-mail bulletin boards, the Internet, on-line services or in a Notes database for central access.

The ScreenCam 2.1 upgrade enables ScreenCam 2.0 customers to record movies under Windows 95. This free upgrade is available from the following sources:

1.The World Wide Web. [Web page address: www.lotus.com/scrncam/sc21upgr.htm
2.SmartSuite and Notes Knowledge Base. [Refer to the document ScreenCam Release 2.1 Upgrade (#2417)
3.CompuServe. [Located in the LotusB Forum (Graphics and Info Management) in Library 6 (ScreenCam). The file name is UPGRADE.EXE.

4.The Lotus re:Quest BBS (617-693-7000). [Located in All Files, General Product Area. The file name is UPGRADE.EXE.

Note: The ScreenCam 2.1 upgrade is not available on disk from Lotus Customer Service.

Supporting Information:

ScreenCam UPGRADE KIT for Microsoft Windows 95

Lotus ScreenCam Release 2.1 (also known as Lotus ScreenCam 96) is a fast, easy, and inexpensive way to show what you mean when you can't be there in person. ScreenCam turns your PC into a VCR that records every click, scroll and action on your screen. Plus, you can add captions and the sound of your voice. Then edit your instant PC movies, and share them with others. Viewers can play the movies back even if they don't have ScreenCam installed.

This Upgrade Kit contains files for upgrading current ScreenCam Release 2.0 users. These files will enable users to record in Microsoft Windows 95. This current release DOES NOT support recording with Microsoft Windows 3.1 (including Microsoft Windows for Workgroups), or Microsoft Windows NT. If you still want Windows 3.1 recording capability, you should not copy these files over your Release 2.0 files.

The complete Lotus ScreenCam 96/Release 2.1 package is available in http://www.lotus.com/applicat/nss96.htm Lotus SmartSuite 96

System Requirements
ScreenCam requires an IBM-compatible 80386-based PC running Windows 3.1 and DOS 3.3 or higher; an 80486-based PC is recommended for recording; a VGA 16-color graphics adapter and monitor. For sound recording or playback, a parallel port, soundcard-enabled device, or PCMCIA sound card supported by Windows 3.1, microphone(s) and speakers are recommended. ✉

A Quick and Easy Way to Reach a Web Site

Bob Mitchell

Yes, I know that SPAUG has a Web Site or a Home Page or whatever you want to call it, but it doesn't mean a thing to me. I don't even know how to cause it to appear on my computer. Sound familiar? Well if you've gotten around to join America On Line, here is one not to well published quick and easy way to do it. As a matter of fact here is a quick and easy way to get to any of these Home Pages that you see listed in television commercials and in print ads....you know the ones that start with http://WWW and are followed by a series of letters, dots and forward slashes. Incidently, that's called a URL.

1. Bring up America on Line (AOL) and take it through to the "Welcome" message
2. Click on GO TO in the Menu Bar at the top of the screen. A drop down menu will appear.
3. Click on KEYWORD in the dropdown message. The KEYWORD bar will activate.
4. Type in the SPAUG URL (http://WWW.mediacity.com/~spaug) and hit the ENTER key. If you want any other URL, type in that one and hit the ENTER key.
5. AOL will automatically take you to the World Wide Web area of the Internet and directly to the desired Home Page or Web Site. Once you get there browse around a bit and see what Kendric Smith has put together for SPAUG.

This is only one of a number of other ways to get to a Web page, either through AOL, Compuserve or any other Internet Service Provider (ISP). We are planning on spending a lot of time on offering Internet information and tips at our upcoming SPAUG meetings. I think you'll find them helpful.

By the way if your not sure of the date, place or guest of the day and you've misplaced your PrintScreen, the SPAUG Web Page is there to provide you with that information. ✉

Windows EIDE

Microsoft TechNet

The information in this article applies to:

- Microsoft Windows 95
- Microsoft Windows operating system v.3.x
- Microsoft Windows for Workgroups v.3.x
- Microsoft MS-DOS operating system versions 5.x, 6.0, 6.2, 6.21, 6.22

Summary

Windows 95 supports the use of Integrated Drive Electronics (IDE) hard disks larger than 504 MB (1024 cylinders) using any one of the following methods:

- ROM BIOS support for INT13h extensions (for example: Logical Block Addressing, or LBA)
- Hard disk bus adapter (hard disk controller) support for INT13h extensions (for example: LBA)
- Using only the first 1024 cylinders of the drive
- Real-mode driver support for geometry translation

In addition, the Windows 95 protected-mode IDE disk driver (Esdi_506.pdr) is used to provide 32-bit disk access when you use any of the first three methods listed above. When you use a real-mode driver to provide geometry translation, 32-bit disk access is provided by Esdi_506.pdr only if you use version 6.03 (or later) of OnTrack Disk Manager's XBIOS drivers.

More Information

IDE hard disks using the AT Attachment (ATA) interface are accessed via the system AT ROM BIOS INT13h services. IDE identifies a hard disk's capacity to the system BIOS by specifying the number of cylinders, heads, and sectors per track (CHS) in the CMOS memory.

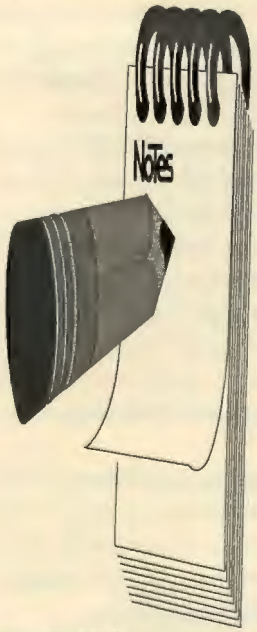
Sectors are always 512 bytes in size, so the capacity of an IDE hard disk can be determined with the following formula:

cylinders x heads x sectors per track x 512 (bytes per sector) = capacity

The system BIOS INT13h interface allows for a maximum of 1024 cylinders, 255 heads, and 63 sectors per track. The IDE interface allows for a maximum of 65,536 cylinders, 16 heads, and 255 sectors per track. To ensure compatible communication between the system BIOS and the IDE interface, the least common denominators of 1024 cylinders, 16 heads, and 63 sectors per track must be used. When you are using the INT13h services to access a hard disk, therefore, the largest drive that can be accessed is 504 MB, calculated as follows:

1024 cylinders x 16 heads x 63 sectors per track x 512 = 528,482,304 bytes, or 504 MB

NOTE: Some hard disk manufacturers consider 1 MB to be 1,000,000 bytes and would therefore consider 528,482,304 bytes to be 528 MB. In standard programming vocabulary and in MS-DOS and Windows 95, however, 1 MB is equal to 1,048,576 bytes, so 528,482,304 bytes is equal to 504 MB.



IDE hard disks larger than 504 MB require more than 1024 cylinders in the CMOS memory (or they could instead use more than 63 sectors per track, but this is very rare). As a result, drives of this size are not compatible with the system BIOS INT13h interface and the entire drive cannot be used unless geometry translation is being employed by the hard disk controller. Because most IDE controllers do not use geometry translation, IDE hard disks are almost always subject to

the 1024-cylinder limit as imposed by the system AT ROM BIOS.

NOTE: Small Computer System Interface (SCSI) controllers usually include a device driver or BIOS ROM that replaces the system AT ROM BIOS services when communicating with a SCSI hard disk and therefore are not limited to 1024 cylinders (504 MB). Enhanced Small Device Interface (ESDI) drives use BIOS ROM-based INT13h functionality to provide drive geometry translation that is compatible with the ATA interface. Also note that when you are using IDE hard disks, it is possible to have a CMOS Setup allow you to view the full number of cylinders but still have the ROM BIOS limited to only 1024 cylinders.

MS-DOS and Windows 95 support IDE drives that exceed the 504-MB (1024 cylinder) limit using either geometry translation or LBA. Geometry translation is implemented by BIOS drivers that translate the IDE hard disk's actual geometry into geometry that will fit within the system BIOS' INT13h limitations. LBA is implemented by the system BIOS or hard disk bus adapter, which translates the CHS information that is passed to the BIOS into a 28-bit logical block address that is used by the drive to retrieve data from the disk.

To use an IDE hard disk larger than 504 MB (1024 cylinders) with MS-DOS or Windows 95, use one of the following methods:

ROM BIOS Support for INT13h Extensions

Update your computer's ROM BIOS to a version that supports INT13h extensions. A BIOS that supports LBA provides automatic translation for IDE hard disks that are configured for more than 1024 cylinders. This allows you to partition and format the entire drive with MS-DOS or Windows 95 and to use the Windows 95 protected-mode disk driver (Esdi_506.pdr) for 32-bit disk access.

NOTE: Contact your computer manufacturer for information about updating your ROM BIOS or enabling LBA support in the CMOS memory. For information about setting CHS information for your hard disk in the CMOS memory, contact your hard drive manufacturer.

For more information about INT13H EXTENSIONS, please see the following article in the Microsoft Knowledge Base:

ARTICLE-ID: Q122052
TITLE: Logical Block Addressing (LBA) Defined

Hard Disk Bus Adapter Support for INT13h Extensions

Purchase a hard disk controller card that supports INT13H Extensions or performs geometry translation. This allows you to partition and format the entire disk with MS-DOS or Windows 95 and to use the Windows 95 protected-mode disk driver (Esdi_506.pdr) for 32-bit disk access.

NOTE: For information about purchasing a hard disk controller that supports INT13h Extensions or performs geometry translation, contact your hard disk or hard disk controller manufacturer.

Real-Mode Driver Support for Translation

Use a third-party software utility to perform geometry translation. Examples of this type of translation software include SpeedStor from Storage Dimensions, EZ-Drive from Micro House, and Disk Manager from OnTrack Computer Systems. If you use version 6.03 of OnTrack Disk Manager's XBIOS drivers (both the Master Boot Record and CONFIG.SYS drivers must be version 6.03), the Windows 95 protected-mode driver (Esdi_506.pdr) obtains the actual geometry and sector skew factor from the OnTrack driver using an API defined in OnTrack Disk Manager's XBIOS specification. In this case, 32- bit disk access is available in Windows 95. If you use an earlier version of XBIOS or another third-party utility, Esdi_506.pdr unloads and disk access occurs in real mode using the systemBIOS' INT13h interface.

NOTE: Disk Manager 6.03 is supported in

protected mode on hard disks on the primary IDE channel and when DriveSpace disk compression is not installed. For drives on the secondary IDE channel, Disk Manager 7.0 or later is required. When using the DriveSpace compression software that is included with Microsoft Windows 95 and Microsoft Plus!, Disk Manager 7.04 or later must be used.

OnTrack Disk Manager's XBIOS driver (Xbios.ovl) is stored in the root directory of the boot drive and is loaded from the Master Boot Record to support the primary partition (drive C). The CONFIG.SYS driver (Dmdrvr.bin) supports extended partitions and must be loaded to access any drives in the extended partition.

For information about setting CHS information for your drive in the CMOS memory, contact your hard drive manufacturer. In addition, these programs usually require you to partition and format the drive with a special utility provided with the third-party software. For information about this procedure, consult the documentation included with the software or contact the software manufacturer.

Use Only the First 1024 Cylinders of the Disk

In the CMOS settings, specify the CHS parameters so that no more than 1024 cylinders are used. This allows you to partition and format the drive to a 504-MB capacity with MS-DOS or Windows 95 and to use the Windows 95 protected-mode disk driver (Esdi_506.pdr) for 32-bit disk access.

For information about setting CHS information for your drive in the CMOS settings, contact your hard disk manufacturer.

Using Large Hard Disks with Windows and Windows for Workgroups

The methods described above will also let you use a drive larger than 504MB (1024 cylinders) with Windows version 3.0 or later or Windows for Workgroups version 3.1 or 3.11. In addition, when you use one of these methods you can use the Windows for Workgroups 3.11 32-bit file access (VFAT) feature on most computers. Note that using INT13h extensions or geometry translation as described above does not allow you to use the Windows or Windows for Workgroups 32-bit disk access feature.

In Windows and Windows for Workgroups versions 3.1 and later, 32-bit disk access is provided by a FastDisk driver called WDCTRL. WDCTRL compares the total number of cylinders specified for the hard disk in the CMOS memory in the BIOS Parameter Block (BPB) with the number of cylinders reported by the hard disk in response to an Identify Drive command. If the BIOS reports more than 1024 cylinders, WDCTRL validation fails regardless of whether the system BIOS or bus adapter supports geometry translation or INT13h extensions.

To use 32-bit disk access with hard disks that are configured for more than 1024 cylinders and are therefore incompatible with WDCTRL, you must use a third-party FastDisk driver provided by the manufacturer of the hard disk or hard disk controller. You can also use such a FastDisk driver in place of Esdi_506.pdr to provide 32-bit disk access in Windows 95, although this should not be necessary for most hard disks.

Disk Manager is manufactured by OnTrack Computer Systems, a vendor independent of Microsoft; we make no warranty, implied or otherwise, regarding this product's performance or reliability.

SpeedStor is manufactured by Storage Dimensions, a vendor independent of Microsoft; we make no warranty, implied or otherwise, regarding this product's performance or reliability.

EZ-Drive is manufactured by Micro House, a vendor independent of Microsoft; we make no warranty, implied or otherwise, regarding this product's performance or reliability.

Microsoft Windows 95

Microsoft TechNet

Windows 95 Setup

[Q: What are some things I can do to make it easier to install Windows 95?]

Some of steps to follow to ensure a trouble-free installation are:
- Run a virus scan before running Setup.
- Run ScanDisk or Chkdsk before running Setup.
- Make sure you have at least 40-45 MB free disk space (50-55 MB to back up your previous MS-DOS and Windows system files so you can uninstall Windows 95 if needed).
- If you have had any problems with your hardware or software, fix them before installing Windows 95.
- Turn off any screen savers or utilities that are running.
- Backup your Autoexec.bat and Config.sys files to a floppy disk.
- Remove any unnecessary programs from Config.sys and Autoexec.bat.
These may include Undelete programs, anti-virus software, boot configuration programs, or any disk utilities.
- Remark the load= and run= lines in Win.ini by placing a semicolon (;) in front of the load and run lines (for example, ; load=C:\Msoffice\Msoffice.exe).
- Shut down any anti-virus software you are running. If you install Windows 95 on a computer that has a CMOS or system BIOS based anti-virus setting, you will receive an error message and Setup will stop. Consult the hardware documentation for information on system BIOS or CMOS enabled settings such as virus detection.
- Run Setup from Windows or Windows for Workgroups.
- Shut down any running programs.
- Remove programs from the Startup group before installation.

[Q: How do I uninstall Windows 95?]

To return to a previously installed version of Windows 3.1, run the Uninstall program. To uninstall Windows 95, "Save System Files" must be chosen during Setup.

To run the uninstall program:

** If Windows 95 is running:
1. Click the Start menu, point to Settings, and then choose Control Panel.
2. Double Click Add-Remove Programs.
3. In the Add-Remove Programs properties dialog box, click the Install/Uninstall tab.
4. In the list of software that can be removed by Windows, click Windows 95.
5. Click Add/Remove, and then follow the directions on your screen. The Uninstall program will remove all long filename entries from your hard disk, and then run an MS-DOS-based program to remove Windows 95 and restore your previous MS-DOS and Windows 3.x files.

** If Windows 95 is not running:
1. Boot from the Windows 95 Emergency Repair Disk if you created one during setup.
2. Type UNINSTAL at the A prompt.

Or

1. Boot from an MS-DOS boot disk.
2. Type the following at the A prompt

X:\Windows\Command\Uninstall.exe

Where x is the drive letter where Windows 95 is installed, and \windows is the name of your Windows 95 directory.

NOTE: It is recommended that you run Uninstall from within Windows 95,otherwise all long filename information may not be completely removed from your hard disk.

[Q: How do I install Windows 95 from a CD-ROM drive?]

Windows 95 can be installed from a CD-ROM drive from within MS-DOS or from within an existing version of Windows. The preferred and most reliable method is to install from an existing version of Windows.

To install Windows 95 from MS-DOS:

1. Boot to a C:\ prompt, and then insert the Windows 95 CD in the CD-ROM drive.
2. Type the drive letter followed by a colon (:) and a backslash (\), and the word setup. For example:

D:\Setup

3. Press ENTER, and then follow the instructions on your screen.
4. Click Next to continue Setup, and then follow the instructions on your screen.

To install from your current version of Windows:
1. Start Windows, and then insert the Windows 95 CD in the appropriate drive.
2. In File Manager or Program Manager, click the File menu, and then click Run.
3. Type:

x:\Setup

where x is the drive letter of your CD-ROM.
4. Follow the instructions on your screen.
5. Click Next to continue Setup.

[Q: How do I install Windows 95 from a remote CD-ROM drive?]

If the computer with the CD-ROM drive is running Windows for Workgroups or Windows 95, share the CD-ROM drive, and then follow these steps:

1. Connect to the shared CD-ROM by connecting to a network drive in File Manager or by using the "net use" syntax at the command prompt. For example:

net use * \\machine\cdshare

2. Double-click Setup.exe, or at the command prompt type setup.

[Q: How do I prepare my computer for a clean installation of Windows 95?]

Windows 95 will install over MS-DOS, as well as over existing versions of Windows and Windows for Workgroups.

>From File Manager in Windows or Windows for Workgroups:

1. Click the drive letter for the drive that Windows 95 will be installed from. Examples:
   a:\ (floppy disk users)
   d:\ (CD-ROM users)
2. Double-click Setup.exe to start the installation process.

During installation, Windows 95 checks for available disk space. If the required hard disk space is not available, Windows 95 displays how much free is space available and how much is required. To free up space on the hard disk, remove unnecessary files.

[Q: Do I need to reinstall my programs when I install Windows 95?]

Windows 95 will pick up program settings when you upgrade an existing version of Windows or Windows for Workgroups. If Windows 95 is installed in a separate directory, all Windows-based programs need to be reinstalled.

[Q: How do I set up Windows 95 on a computer running Windows NT?]

The Windows NT computer must be configured as multi-boot between Windows NT and MS-DOS.

1. Start up the Windows NT computer in MS-DOS mode.
2. Run Windows 3.x, and then in Program Manager, select the File menu, and then choose the Run command.
3. Type:

x:\Setup.exe

where x is the drive letter containing your Windows 95 Setup disk or CD-ROM.
4. Install Windows 95 in a new directory.

NOTE: Windows 95 cannot be installed into the same directory as Windows NT or a shared Windows NT/Windows 3.x directory.

A FAT partition is required for the Windows

95 / Windows NT dual boot configuration to work. Windows 95 must be installed into a separate directory on the FAT partition. The Windows NT OS Loader automatically provides a choice for Windows 95 or MS-DOS on the menu.

[Q: I have 25 MB free on my hard disk, and when I try to upgrade to Windows 95 it tells me I do not have enough disk space. How much do I need for Windows 95 if I am upgrading?]

When you upgrade over Windows 95, you need 35-40 MB of free disk space, as opposed to 50-55 MB for a full installation.

NOTE: Actual numbers vary depending on options and accessories selected during Setup. If you use disk compression (MS-DOS DoubleSpace or DriveSpace, or Stacker), Setup may require more than 35-40 MB because of the way disk compression estimates available space. Setup will adjust the required free space to ensure that you do not run out of disk space during Setup.

[Q: Can I install Windows 95 on a computer that has OS/2 \MS-DOS\Windows? Can I still dual boot?]

Windows 95 Setup.exe will not run on OS/2. To install Windows 95,boot the computer to MS-DOS, and then run Setup.exe from the MS-DOS prompt.

NOTE: If you are upgrading over OS/2 on an HPFS partition, you will need your OS/2 disk 1 during Setup.

If you are using OS/2 Boot Manager to choose operating systems at startup, Setup will disable Boot Manager to insure that Windows 95 can reboot the system and complete its installation. Boot Manager can be reactivated by running the FDISK utility that comes with OS/2 (see procedure at the end of this section).

If you are not using Boot Manager, configure your computer to use Boot Manager, and then follow the instructions above. Consult your OS/2 documentation for information on Boot Manager.

If you start MS-DOS from a floppy disk and then run Setup, you will not be able to start OS/2 after Windows 95 is installed. You need to delete the Autoexec.bat and Config.sys files that OS/2 uses before running Setup.

To remove OS/2 from your computer after you install Windows 95:
1. Back up the files you want to keep onto a floppy disk or network drive.
2. Delete the files in each of your OS/2 directories and subdirectories, and then delete the OS/2 directories.
3. In the root directory, you need to delete the following hidden files:

EA DATA.SF
OS2LDR.MSG
OS2KRNL
OS2BOOT
WP DATA.SF

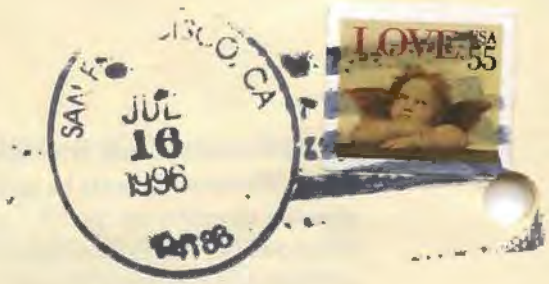
In My Computer or Windows Explorer, make sure hidden files are visible. To do this, click the View menu and then click Options. Then click "Show All Files". Then delete the OS/2 files listed above.

Note: If you have a version of OS/2 other than version 2.0, the names of your OS/2 files may differ from those in this procedure. Also, depending on which version of OS/2 you have, you may see the following files in your root directory which you can delete:

OS2DUMP
OS2LDR
OS2LOGO
OS2VER

4. Empty the Recycle Bin to permanently remove the files from your computer.
5. If you had Boot Manager installed and want to remove it, restart your computer and then complete the following steps. (It is recommended that you print this file before restarting your computer.)
6. When you see the Boot Manager menu,

(Continued in August PrintScreen)



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