

UNIVERSITY OF MINNESOTA

Supercomputing Institute

Scientific Development and Visualization Laboratory

Newsletter of the Supercomputing Institute
Scientific Development and Visualization Laboratory

Many Changes at the SDVL

There have been many significant changes to the SDVL in the last six months: a new mission statement has been formulated, new workstations have arrived, new disks and disk policies and a new printing environment is in place, and the installation of a new network is in progress. These changes are outlined in this newsletter.

New Mission

In the Spring of this year, the SDVL Steering Committee approved a new mission for the lab:

"The Supercomputing Institute exists as an interdisciplinary program at the University of Minnesota in order to promote forefront research through supercomputing. The primary mission of the Scientific Development and Visualization Laboratory (SDVL) is to enhance the Supercomputing Institute by providing its researchers access to current supporting technology and expertise necessary to carry out successful state-of-the-art supercomputing. The SDVL should be a place where University researchers can work with staff and facilities to enhance the effectiveness of their computations on supercomputer systems. Since supercomputing is increasingly concerned with large, complex data sets that require application of sophisticated multidimensional visualization strategies, a central function of the SDVL is to maintain an environment

where researchers can visualize their supercomputer-generated data in the most up-to-date manner. While the SDVL does not exist expressly for research in visualization technology, it should work closely with investigators in that area so that it provides Supercomputing Institute researchers the most effective visualization hardware and software. A second central function for the SDVL is to provide individual University researchers with access to expertise in high-performance computing so that they can develop the necessary skills to begin supercomputing

Contents

Many Changes at the SDVL	1
New Mission	1
New Workstations	2
The O2 Workstation	2
The OCTANE Workstations	2
New Disks and Disk Policies	2
Printing	2
Network	3
Steering Committee	3

themselves or become familiar with these computing technologies for use in their own laboratories."

Essentially, this means you will see more high-end equipment at the SDVL. This will result in fewer, but significantly better workstations.

New Workstations

There are three new workstations at the SDVL: an SGI O2 workstation with video hardware, and two SGI OCTANE workstations.

The O2 Workstation

The O2 workstation (`i4.msi.umn.edu`) is primarily for the production of videos. This workstation has video hardware for screen captures (images and animations), inputting short segments from VHS and S-VHS video tapes, editing animations and sequence of images, and outputting animations to VHS and S-VHS video tapes.

The screen capture capabilities are controlled by the software "mediarecorder". Using mediarecorder, you can capture the screen while applications are running. The results can then be put into various movie formats such as quicktime or MPEG, or played back onto video tape. Mediarecorder can also be used to input short segments from video tapes.

Any sequence of images or movie can be edited by using the software "Composer" from Alias/Wavefront. Any image, sequence of images or movie that as been brought into Composer can be modified. For example, you can:

- add text
- adjust the colors
- scale, rotate, and translate

These operations can be applied to a single image, or to any part of a movie.

There are many special effects. For example, you can fade from one image to another or replace one part of an image or movie with another.

The movies constructed by Composer can be put onto VHS or S-VHS video tape, or put in any popular movie format such as MPEG or quicktime.

The OCTANE Workstations

There are two new OCTANE workstations (`i1.msi.umn.edu` and `i5.msi.umn.edu`). Each has a single R10000 processor. The workstation `i5` is an OCTANE/SSI workstation. The OCTANE/SSI has two hardware geometry engines and two raster engines. The workstation `i1` is an OCTANE/MXI workstations. The OCTANE/MXI workstation is an SSI workstation with a hardware texture subsystem.

New Disks and Disk Policies

The disks for home directories were upgraded and their capacity has increased from 16 gigabytes to 32 gigabytes. The technical support staff can increase your quotas on home directory as disk space permits. Please contact us (`help@msi.umn.edu`) to discuss your disk requirements.

The file system `/wrk`, which was supposed to be used as temporary storage space, has been replaced by the `/scratch` file system. The `/scratch` file system is 16 gigabytes and is intended for temporary storage. Files in `/scratch` are removed every Sunday at 4:00a.m. Exceptions can be made. Contact the technical support staff (`help@msi.umn.edu`) before 5:00 on Friday.

Home directories are backed up every night. The `/scratch` file system is never backed up.

Printing

The printing environment has been upgraded. The names of the printers have changed, and there is a new procedure to print from a Macintosh. Each printer is accessible from all machines—there are no printers dedicated to Macintoshes.

The UNIX workstations share access to an Apple LaserWriter 16/600PS printer labeled "lw1" and a Hewlett-Packard model 4M LaserJet printer labeled "hp1". You may also print to a Hewlett-Packard model 4M LaserJet printer labeled "hp2" that is located in the East Wing."

The SDVL has two color printers: a Tektronix Phaser 340 phase-change color printer (labeled 340), and a Tektronix Phaser IISDX (labeled IISdx). To help cover the costs of color printer supplies, the Institute charges

\$0.15 per page and \$3.50 per page, respectively, for each page printed on the Phaser 340 or the IISDX. For the IISDX, there is no difference in price depending on the media (paper or transparency) used. For the Phaser 340, you must purchase transparencies from tech support for \$1.00 each (These may be charged to an account supplied by the principal investigator of a project). Charging for both printers is handled automatically. For researcher convenience, color printing charges are combined with any Institute phone, mail, and copying charges.

To print from a Macintosh, you must now identify yourself. To do so, you need to create an AppleShare Volume, which is a folder that resides in your UNIX account but is accessible from a Macintosh. This will require that you enter a user name and a password. This procedure is described in:

http://www.msi.umn.edu/sdvl/info/color_printing/

For more information, see:

<http://www.msi.umn.edu/sdvl/info/printing.html>


Network

The technical support staff is in the process of upgrading the network. We are in the process of upgrading connectivity to each machine and the outside world by a factor of 10. Some current machines and many of the new machines will have 100 megabit/sec connections, replacing old 10 megabit/sec connections. New cable is being pulled so that these speeds may be achieved. New equipment has also been purchased to provide us with a switched network, decreasing a lot of unnecessary traffic.

You will see, and probably have seen, construction at the SDVL. We have added cable trays and wire molds to accommodate the cables and fiber necessary for the faster network connections. This work should be completed soon.

This publication is available in alternative formats, upon request, to individuals with disabilities. Please contact Ann Johns at 612-624-1556.

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