Information Technology Services (ITS) manages the Caltech campus network infrastructure and all Internet-related services. We also provide computer training and consulting support, maintain facilities for educational computing and digital media creation, provide system management services to specific groups on campus, and repair computers and printers. ITS is located in Steele Building, building number 81 on campus maps.

For a detailed description of our mission, see the Information Technology Services mission statement at www.its.caltech.edu/its/help/policies/mission.shtml.

Our new website at www.its.caltech.edu contains announcements, documentation, and other publications. Please check there often for news and information. Also, subscribe to our automated announcement mailing list by sending email to majordomo@its.caltech.edu with a blank subject line and the text of the message stating subscribe ITS-News.
The ITS Help Desk is available to assist members of the Caltech community with a wide variety of computing and network related questions and problems. Supported platforms include PowerMac; PCs running DOS, Windows, Windows95 and WindowsNT; and Suns running Solaris. The ITS consulting staff supports many of the standard office and educational programs in use on campus and are available to answer your questions by phone, email, or in person. The Help Desk dispatcher is the central point of contact for ITS and can be reached via email at help@caltech.edu, by dialing x4602, or in person in the Steele sub-basement, room 014. Through the use of the on-line tracking system, the dispatcher assigns your help request to the appropriate staff member. See www.its.caltech.edu/its/helpdesk/ for more information about the ITS Help Desk.
The mission of the Technology Learning Center (TLC) is to provide training courses and instructional programs that will raise the level of computer proficiency in the Caltech community, facilitate the transaction of business on-line, and integrate new computer-based technologies into administration, education, and research. The TLC maintains two state-of-the-art classrooms on the third floor of Steele in rooms 306 and 314.

As Caltech implements the new computing systems selected by APE (Administrative Process Engineering), ITS will be working with staff via the Technology Learning Center to provide specialized hands-on, instructor-led courses that teach the new business processes and the new software.

For more information about the training options and courses offered by the TLC, see www.tlc.caltech.edu or contact the TLC directly at tlc@its.caltech.edu or x4942.

The TLC provides
- Instructor-led classroom instruction
- Video- and computer-based training
- On-site training for departments or groups
- Individual instruction
- Information on outside computer classes
- Office software certification testing
ITS supports the Campus Computing Lab, as well as a Windows NT cluster and a cluster of UNIX servers, for use by the Caltech community. We also provide the campus community with free Internet services such as email, Web services, USENET newsgroup access, and Domain Name Services for CITNet computers. See www.its.caltech.edu/its/facilities/labsclusters/ for specific information about the ITS computing labs and servers.

**ACCOUNTS**

Before you can use many of the services and facilities provided by ITS, including email, you must get an ITS UNIX account. Accounts are available to all Caltech faculty, students, and staff. Please be sure to read Caltech’s Computer Ethics policy and the ITS general guidelines for computer use, including our email policy, at www.its.caltech.edu/its/help/policies/ before using the computing resources provided by ITS.

Incoming students (undergrads, transfers, and graduate students) will have accounts created for them automatically. All others should request an account by filling out an Account Request Form available outside room 207 Steele. The form is also available on the web at www.its.caltech.edu/its/facilities/labsclusters/unix/.

An ITS UNIX account allows Internet email access via POP mail software (e.g., Eudora or Outlook) or a shell account-based mail reader (e.g., Elm, Pine, UNIX Mail). See www.its.caltech.edu/its/services/internetapps/email/ for more information about email and your email options with an ITS UNIX account. In addition to email, an ITS UNIX account allows Telnet and Rlogin access to the UNIX cluster servers, as well as access to the computers in the Windows NT cluster and the NT and UNIX workstations in the lab. Dialup access to the Caltech network also requires an ITS UNIX account.
ITS runs www.its.caltech.edu, a web server on which users may publish web pages, subject to the cluster’s disk usage quota. See www.its.caltech.edu/its/services/internetapps/web/ for more information about publishing web pages on the Caltech web server. Your ITS UNIX account can also be used to access USENET newsgroups on the Internet using a newsreader. Information about reading and posting to USENET newsgroups at Caltech is available at www.its.caltech.edu/its/services/internetapps/news/.

CAMPUS COMPUTING LAB

The ITS Campus Computing Lab, located in 214 Steele, consists of about fifty computers and workstations including Power Macintoshes, PCs running Windows NT, and Sun workstations. Resources include network printers, scanners, CD writers, and removable media drives.

The lab itself is always open; however, Steele building’s outside doors are locked after normal business hours. Users requiring after-hours access to the lab can request a key that opens the south entrance to Steele and the 2nd floor computer lab. To request a key, visit the lab attendant in 214 Steele and bring your valid campus ID. The lab is staffed on weekdays until about 10 p.m.

While the lab is primarily geared toward student use for course work, Caltech faculty and staff may freely use the lab as well.

Lab computers feature a selection of office, graphics, computational, and data analysis software, and provide both local and network file storage. Available software includes compilers (e.g., C and Fortran) and mathematical software packages such as Matlab, Mathematica, and Maple. See www.its.caltech.edu/its/facilities/labsclusters/studentlab/ for more information about the lab and a complete list of lab software.

STUDENT HOUSE LABS

ITS supports a computer lab in each of the student houses on campus. Each house has a representative whom students may contact for network, application, hardware and software problems. The listing of current student house representatives is at www.its.caltech.edu/its/facilities/labsclusters/housereps.shtml.
CITNet is the name of the campus-wide network backbone that also provides campus Internet connectivity. It is managed by ITS. In the past, individual divisions and departments have been responsible for purchasing and installing the building networks that connected them to CITNet. However, in collaboration with the Caltech Electrical and Carpentry Shops, ITS is currently implementing a program called CITNet 2000, the goal of which is to upgrade the entire campus network with high-speed data connections. The upgraded network will provide digital data connectivity to all on-campus facilities, high bandwidth access to the Internet, and access to on-campus facilities for remote users. CITNet 2000 includes Caltech’s participation in state and national computer cooperative networking projects such as CENIC/CalREN-2, Internet2/Abilene, Next Generation Internet (NGI), Energy Sciences Network (ESnet), Los Nettos, and vBNS. Industry vendors for CITNet 2000 include Cisco, Concord, American Power Conversion, Panduit, Cambio, and Remedy.

CITNet 2000 includes all campus network cabling, from the main campus routers to each building’s individual office wall ports that connect computers and other equipment to the network. In this way, all offices, labs, classrooms, and residences on campus can be assured that the network hardware is being maintained and kept up to date in accordance with ITS’ campus-wide networking standards. For more information about CITNet 2000 and the project status, see www.its.caltech.edu/its/news/citnet2000/.

THE NETWORK OPERATIONS CENTER

The new network is designed with management in mind. The ITS Network Operations Center (NOC) in Steele is responsible for maintaining network connectivity campus-wide. Our goal is to provide reliable, secure, and convenient network access based upon accepted international and industry standards, while allowing for the specialized networking requirements of labs and other experimental facilities on campus. The NOC produces reports covering changes made to the network, network-related problems, and network usage statistics. These reports provide the basis for hardware and software recommendations and incremental network upgrades.

It is the policy of the ITS Network Operations Center to make information about the network configuration and operations as widely known as possible. Questions, requests for NOC reports, and reports of any network-related problems should be directed to the ITS Help Desk, either by dialing x4602 or sending a detailed message to the Network mailing list at network@caltech.edu.
ACCESSING THE NETWORK FROM OFF-CAMPUS

- **Modem Dialup Access**
  ITS has a dialup service that supports PPP dialup, traditional dialup, and Apple Remote Access (ARA) all with one phone number. The server is able to detect automatically which of the three supported protocols your software needs. The dialup server’s modems currently support standards-based connections up to 33.6Kbps, and will soon support the v.90 standards.

  Access to the dialup server is controlled by your ITS UNIX account username and password. If you don’t have such an account, you won’t be able to use the server. To get an account, fill out an Account Request Form, available in the hallway outside room 207 Steele. The form is also available on the web at www.its.caltech.edu/its/facilities/labsclusters/unix/.

  Occasional routine system work on the dialup server will be limited as much as possible to Thursday mornings. News of scheduled system work will be posted in advance at www.its.caltech.edu/its/services/networkra/dialup whenever possible.

  The phone number for the dialup modem service is **626-685-7060**.

- **ISDN**
  ITS maintains a small ISDN pool, supporting TCP/IP and AppleTalk protocols. See www.its.caltech.edu/its/services/networkra/ISDN to learn more.

- **Cable Modems**
  Cable Internet modems provide another option for members of the Caltech community who wish to access the Caltech network remotely. A dedicated link has been established between the Caltech network and Charter Communications Company. This arrangement allows Caltech faculty, staff, and students to extend the Caltech campus network into their homes. Campus network resources that allow access only to Caltech computers (e.g., Caltech’s Library System’s services including online journals, SciSearch, and Britannica Online) are accessible to users of this service. In addition, cable modems are currently the fastest method for home access to the Caltech network, offering speeds up to 512K bytes per second for retrieval of information, which is 10 to 20 times the speed of traditional modems.

  See www.its.caltech.edu/its/news/bulletins/db050698.shtml for specific details regarding cable modem service, or contact the ITS Help Desk at help@caltech.edu or x4602 for more information.
SOFTWARE SITE LICENSING AND VOLUME DISCOUNTS

Caltech has sitewide software license agreements with the vendors listed below. In many cases, this software is available for little or no cost to Caltech users. The software is only to be used on Caltech-owned machines, and is not for personal use. Contact the ITS Help Desk at x4602 or email help@caltech.edu if you wish to obtain Caltech site-licensed software, or have any questions.

Software programs available:

- Maple V version 5 for all platforms
- Mathematica 3.0.1 for Windows and Macintosh platforms
- Mathematica 3.0.2 for UNIX and other non-Windows or Mac platforms
- Matlab 5 for UNIX platforms only
- PV-WAVE for UNIX and Windows

Volume discounted software includes SSH (SecureShell), PGP (Pretty Good Privacy), and Hummingbird Exceed. In addition to these programs, ITS has volume deals for DEC, IBM RISC, HP-UX, SGI, and SUN operating systems and compilers, as well as MultiNet for DEC Systems and Microsoft Open License Program (MOLP) licenses for Microsoft programs and operating systems.

See www.its.caltech.edu/its/services/sitelicensing for further information on the site licenses and volume-discounted software provided by ITS. For all other software and hardware sales, visit Caltech Wired located in the Winnett Student Center, x3492.
The ITS Security Officer keeps abreast of current computing and network system security issues, and maintains a web site to keep the campus community informed of security issues and incidents. To report a computer security issue, email the Help Desk at help@caltech.edu, call x4602, or contact the Security Officer directly by emailing security@caltech.edu or calling x3900. Systems security at Caltech includes such issues as deliberate breakins, denial-of-service attacks, viruses and virus hoaxes, and preventing or coping with such forms of attack.

Services provided by the Security Officer include maintaining a web site listing the latest security patches available for various operating systems, and tracking recent systems security-related incidents on campus. Some of the information on the ITS security web pages is restricted to Caltech-only or password-protected access. PGP-encrypted email can be exchanged with the Security Officer for discussion of sensitive topics. The ITS Security Officer’s PGP public key is available at www.its.caltech.edu/~securityupdates/PGPkey.shtml.

The Security Officer is also available to advise and train members of the Caltech community on security issues pertaining to specific systems. For further information, see the security web pages at www.its.caltech.edu/~security, send email to security@caltech.edu, or call x3900.
DIGITAL MEDIA CENTER

Located on the third floor of the Sherman Fairchild Library, the Digital Media Center provides Caltech faculty, students, and staff with a central resource for the exploration, creation, and use of digital media and interactive technologies. The DMC functions as a consulting center, self-service multimedia studio, learning resource, production facility, technology showcase, and partner with other academic and administrative units in projects and activities involving new media technology.

SELF-SERVICE MULTIMEDIA STUDIO

The DMC operates a hands-on multimedia development facility which is open to the entire Caltech community. The multimedia studio provides free access to multi-platform (Mac, NT, SGI), state-of-the-art hardware and software for multimedia production and delivery as well as help with using the technology.

The DMC’s multimedia studio gives you a chance to get acquainted with digital tools, learn digital skills, and prepare digital materials. You will find tools and resources for scanning photos, negatives, slides, x-rays, and printed artwork; authoring and encoding web-based material; producing various types of high-quality color prints; working with audio and video material; recording CDs; producing digital paintings and illustrations; editing and enhancing photographs and graphic images; building animations and 3-dimensional models; and for weaving these different elements together into a final publication, web page, interactive presentation, or instructional program.

Tools and Services

- Technical and creative consulting
- Still and motion graphics for print, video, and web
- Digital Video
- Animation
- 3D modeling and rendering
- Specialized scanning
- Photo-quality printing
- CD/DVD recording
- Publication design and layout (print and electronic documents)
- Interactive multimedia
- Desktop presentations
- Audio/video capture, editing, and recording
- Web media design, development, and delivery
- Computer graphics for image analysis
CONSULTATION SERVICES

The DMC offers a variety of consulting services, both creative and technical. We work closely with members of the research community, providing consultation on imaging tools, strategies, and techniques and helping prepare visualizations for journal publication, professional meetings, public presentations, and distribution to the news media. We also offer information and guidance to faculty and other members of the campus community who wish to establish specialized digital media systems and capabilities as well as provide help in the design and planning of multimedia classroom projects and teaching materials.

PRODUCTION FACILITY

The Digital Media Center operates a professionally staffed and equipped production facility and collaborates regularly with faculty, staff, and students in the production of materials and presentations for audiences both inside and outside the Institute. Materials produced in the DMC appear frequently in both the professional and popular press and include videotapes, animations, materials for print and electronic publication, slide presentations, interactive course materials, and CD-ROMs.

For more information about the Digital Media Center, see www.its.caltech.edu/its/digitalmedia/ or contact the DMC at dmc@caltech.edu or x3420.
COMPUTER REPAIR

ITS offers troubleshooting and repair services for Macintoshes, PCs, and Suns, as well as printers and other peripherals (monitors, keyboards, etc.). Service for all Apple products is provided in-house by a certified Apple Technician. Service for other types of computer hardware or peripherals is either provided in-house or by third-party repair shops.

We offer both carry-in servicing and on-site service for campus locations. The quickest method for requesting repairs is to bring in the equipment in need of repair, and drop it off at the ITS Help Desk in room 014.

Steele. Service fees are based solely on parts and labor, with the labor charge prorated at $50/hour. There is a minimum bench test fee of $20 for in-house diagnosis of the problem, which is applied toward the total cost of repairs if repairs are performed. For equipment sent out to a third-party repair shop, there is a minimum charge of $50.

For more information about troubleshooting and repair of hardware problems, see www.its.caltech.edu/its/services/repairsales/ or contact the ITS Help Desk at help@caltech.edu or x4602.

SYSTEM MANAGEMENT AND DESKTOP COMPUTING SUPPORT

ITS offers system management and desktop computing support services to Caltech divisions and departments by contract. Upon request, ITS will hire and supervise a system manager whose salary and benefits are paid by the requesting division or department. Groups requiring only a percentage of one full-time employee (FTE) can also arrange to purchase a portion of a system manager’s time. In addition to salary, the contracting department or division is responsible for providing suitable office space and equipment for the system manager. Contract system managers are part of the ITS technical team, and attend relevant ITS staff meetings.

ITS contract system managers support UNIX systems; PCs running Windows NT, Windows95 or older versions of Windows; and Macintosh systems. Standard ITS configurations are applied wherever possible in a given environment.

For more information about contracting system management services from ITS, contact Rich Fagen, Director of Information Technology Services, at rich@caltech.edu or x3896, or see www.its.caltech.edu/its/services/sysmanagement/.

Services Include

- Installation and configuration of computer hardware and peripherals
- Software installation and updates
- Data backup and restoration
- Account creation
- System security management
- Ongoing system maintenance and troubleshooting
- Person-to-person support
TO GET HELP

ITS Help Desk • x4602 help@caltech.edu

ITS Dialup Services • x4602 modems@caltech.edu
For reporting dialup problems, e.g., downed modem lines, cable modem troubles

Alumni Computer System Help • x8365 help@alumni.caltech.edu
Note: this service is staffed by volunteers

Biology Division Help • x3827 help@biology.caltech.edu
ITS Biology Division Help Desk

Business Services Division Help • x3500 acshelp@acs.caltech.edu
ACS Help Desk
Note: Administrative Computing Services is a separate organization from ITS

Geology and Planetary Science Division Help • x3993 help@gps.caltech.edu
ITS GPS Help Desk

Humanities and Social Sciences Division Help • x4073 help@hss.caltech.edu
ITS HSS Help Desk

Student House Computing Lab Help • its-rep@caltech.edu
ITS Student House Representatives

Caltech Hostmaster • x4602 hostmaster@caltech.edu
To request IP addresses or changes to them

Network Management • x4602 network@caltech.edu
For reporting network problems

Network Security • x3900 security@caltech.edu
For reporting security incidents

ITS Website Feedback • x4602 itsweb@caltech.edu

ITS Director’s Office • x3896 rich@caltech.edu

TO GET MORE INFORMATION

EMAIL LISTS

ITS News and Announcements • ITS News is for general announcements and information affecting users of CITNet and other ITS-maintained systems. Subscribe to this automated list with a message to majordomo@its.caltech.edu with a blank subject line and the text of the message stating subscribe ITS-News.

Security • The ITS Security Officer sends out notifications of new computer security incidents. Subscribe to this automated list with a message to majordomo@its.caltech.edu with a blank subject line and the text of the message stating subscribe security-announce.

Network status and Information • Planned network changes and known outage information are distributed to the ip-managers mailing list. This list is intended primarily for system managers. Subscribe to this automated list with a message to majordomo@its.caltech.edu with a blank subject line and the text of the message stating subscribe ip-managers.

URLs to bookmark

www.its.caltech.edu • A starting point for computing-related announcements, news, documentation, and other information.

www.its.caltech.edu/its/services/internetapps/ • For information about the Internet applications that can be used with an ITS UNIX account, including how to configure and use several popular email packages.

www.caltech.edu/www • For information on how to create, publish, and maintain pages on our Web site.

www.its.caltech.edu/~security • For general computer security information and news about campus-specific security events, respectively.

www.its.caltech.edu/its/helpdesk/ • For instructional pages on configuring your system, general help and informational pages.

www.tlc.caltech.edu/tlc/learn/course.htm • For a complete training course list.

www.its.caltech.edu/its/facilities/labsclusters/ • For information about the computer labs and servers maintained by ITS.

www.its.caltech.edu/citnet2000/status.shtml • For current status information on CITNet 2000 progress.

www.its.caltech.edu/its/services/networkra/dialup • For advance notice about scheduled maintenance on the remote access dialup server.