

Customer Service-Level Understanding (SLU)

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Customer Service-Level Understanding

1 Introduction

Academic Department Support (ADS) is a group within the campus Computing, Communications, and Information Technologies (CCIT) department that provides computing support to most academic departments at Mines. (ADS has previously been known as the *Extended Support* group within the former Academic Networking and Computing department.) The scope of ADS activities includes hardware, software, and configuration support for desktop and laptop computers within all included academic departments. A separate Administrative Department Support group is responsible for computing issues in administrative and other non-academic departments.

Support for teaching labs, department file, print and application servers, and audio-visual equipment, as well as enterprise-wide services such as networking, email infrastructure, World Wide Web services, Blackboard, Trailhead, and other network-based applications is provided by other groups within CCIT, though ADS personnel may assist in troubleshooting such issues.

In all cases, customers may request support through the Mines Help Center or “Helpdesk” at <http://helpdesk.mines.edu>.

Customer needs and requests for ADS support often outweigh the available resources. As such, it is inevitable that compromises must be made and some expectations will not be met. This document presents a strategy for setting realistic expectations within this environment.

1.1 Policies and Guidelines

This document is built upon and extends the policies expressed in *Computing & Networking Resource and Responsible Use Policies and Guidelines*, available at:

http://inside.mines.edu/UserFiles/File/policies/CIT/CIT_Responsible%20Use.pdf

These extended principles and guidelines are the foundation for the Service-Level Understanding (SLU) presented here. These principles and guidelines are:

1. Academic Department Support (ADS) and Computing, Communications, and Information Technologies (CCIT) are professional organizations that have a responsibility to organize and manage themselves in an efficient and productive manner to best serve as broad a base of their customers as possible.
2. The customer base for ADS is primarily found in Mines' academic departments. ADS will attempt to resolve issues involving desktop and laptop computers, other hardware, and software, used by student, faculty, and staff in those departments.
3. Personally owned equipment is not supported, though advice may be given and support for email may be provided.
4. The academic departments have a right and responsibility to work with ADS to establish priorities within their own departments.
5. ADS is focused on *academic* support. Strictly *research* programs are expected to be self-supported.
6. ADS strives to allocate support in a fair and equitable manner to our various constituents. ADS will reprioritize support requests when necessary to reach this goal.

7. ADS staff should be given diverse assignments and opportunities to learn and grow within the constraints of departmental needs and priorities and their own technical skills and capabilities.

1.2 Practices

The application of these policies and guidelines will be via these general practices. These will be developed and expanded in the remainder of this document:

1. ADS will establish a basic priority scheme to drive its daily activity.
2. Academic departments should work with ADS to determine the priorities of work within their own departments.
3. Reasonable attempts to standardize offerings must be made in order to achieve optimal supportability and efficiency.
4. In order to achieve an optimal distribution of resources, support personnel will be pooled rather than dedicated to specific departments. Support personnel may be designated to work in functional teams, but no person or persons are “on-call” for a department.
5. ADS staff members will conduct fact-finding “walk-throughs” of supported departments on a regular basis, to be aware of departmental issues and to help departments establish support priorities.
6. All work will be documented and time will be tracked to help provide a fair and equitable distribution of resources.
7. Some tasks or requests consume an unreasonable amount of time and personnel resources. These will be identified and restricted.

This Service-Level Understanding will first establish the options from which a customer may request support. It then defines how problems will be prioritized. Then customer responsibilities are defined, followed by ADS responsibilities and limitations.

2 Service Options

Computer systems that are built and maintained according to ADS standards require much less overall support time. Systems that are administered and maintained by the end-user typically require an inordinate amount of support when support is requested.

2.1 Types of Users

We recognize two types of users: those who administer their own machines themselves, and those for whom CCIT staff administer and support the machine. In general, if an administrative- or root-level account is held by the user, the machine is considered self-supported. If an administrative- or root-level account is held only by CCIT staff, the computer is considered fully supported by CCIT.

2.1.1 Self-Supported Users

CCIT will perform initial setup and configuration of a system, will provide hardware support (but no funding), and will support shared services such as printers and file servers. Backup and recovery of data is limited to data stored on CCIT-administered file servers. If necessary, a basic software configuration can be reinstalled following failure of the platform, but further configuration is left to the self-supported user. Self-supported users maintain the administrative rights to their system. ADS *may* have administrative rights to these machines (as a side-effect of

our particular computer infrastructure), but will not access these machines without the user's knowledge and permission.

The self-supported user is responsible for:

- Building and installation of non-standard systems (except as noted below)
- Installation of applications
- Operating-system and application maintenance, upgrades, and security patches
- Virus, worm, and intrusion protection
- System repair and recovery due to worms, viruses, intrusions, or data corruption
- Other typical and necessary administrative chores

2.1.2 Fully Supported Users

CCIT will perform initial setup and configuration of the system, will provide hardware support (but no funding), and will support shared services such as printers and file servers. Backup and recovery of data is limited to data stored on CCIT-administered file servers. Supported operating systems will be limited to those endorsed by ADS. In addition ADS will:

- Maintain the operating system and applications, providing upgrades (if funded or free) and security patches
- Manage the customer's virus, worm, and intrusion protection systems
- Provide system repair and recovery due to worms, viruses, intrusions, or data corruption
- Install applications
- Other typical and necessary administrative chores

In all cases, a user is responsible for backing up their own data. CCIT will attempt to recover data from its file-server backups (for customers who choose to use shared network drives), but there are no guarantees that these data will be the desired version or will be provided within a desired time window.

Occasionally, under special circumstances, a fully supported user will also have administrative access. It is expected that this access is used rarely and for emergencies only.

2.1.3 Exceptions

These descriptions apply to all users of computing for office automation, file management, network access, application use and other standard uses. Occasionally, customized machines are required for certain academic lab and teaching environments. In these cases we will work with the responsible faculty to negotiate levels of responsibility. Without exception, purely *research* uses are considered self-supported.

2.2 Types of Systems

Basic ADS configurations are developed for these standard operating systems and hardware types. Software configurations include a basic Windows, Mac OSX, or Linux foundation with standard add-in options. Non-standard setups using specialized hardware and software add-ins are usually installed over this basic foundation. This is true for computers supported by ADS, as well as computers in teaching labs supported by the CCIT Lab Team.

System Type	Available Platform	Typical Use
Desktop PC, Workstation, or Laptop	MS Windows, Linux, Mac OSX	Office automation, research, email and communications. Typically deployed to faculty, staff, and student environments. This constitutes the focus of ADS support.
Instrumentation Interface	MS Windows, Linux, Mac OSX	Deployed in research and equipment labs, may be used for process control, equipment control, or data acquisition and collection. Computers used only for research are considered self-supported. Though not a primary focus, ADS may help support computers used for teaching purposes or research, as able.
Server	MS Windows, Linux, Mac OSX	A server is required when shared services are requested. These may include shared printers and disk storage, and serving of applications, files, licenses or web. Other groups within CCIT, such as the CCIT Server Team, typically handle such support.

Self-supported users manage their own “custom” systems. ADS will, upon request, make a static copy of the configuration for disaster-recovery purposes. However, the customer must protect his or her own data.

2.2.1 Microsoft Windows Support Policy

This policy describes the platforms that are endorsed by CCIT. Any systems not endorsed will receive support on an “as able” basis. System administration and extreme measures will not be provided for non-endorsed systems. Support will also be provided at a lower priority than support for endorsed systems.

1. Only releases currently supported by Microsoft will be considered as endorsed platforms.
2. Hardware platforms must meet Microsoft’s minimum requirements for that release.
3. Users will purchase any software or hardware required or desired for upgrading.
4. Critical security patches must be installed. Any system that cannot be made secure may be denied connection to the network.
5. All systems will employ current virus protection and a host firewall.

2.2.2 Linux/UNIX Support Policy

This policy describes the platforms that are endorsed by CCIT. Any systems not endorsed will receive support on an “as able” basis. System administration and extreme measures will not be provided for non-endorsed systems. Support will also be provided at a lower priority than support for endorsed systems.

1. There is some existing presence of IBM AIX, SGI IRIX, and Sun Solaris UNIX on campus. Support has been provided on an “as able” basis. These platforms are considered *not* endorsed.
2. Ubuntu Linux is the preferred and endorsed Linux distribution on campus. Other versions of Linux are not endorsed but will be supported on an “as able” basis.

3. Only releases currently supported by Ubuntu.com (Canonical, Ltd.) will be considered as endorsed platforms.
4. All hardware platforms must meet Ubuntu's minimum requirements for that release.
5. Users will purchase any software or hardware required or desired for upgrading.
6. Critical security patches must be installed on all platforms. Any system that cannot be made secure may be denied connection to the network.
7. All systems will employ a host firewall.

2.2.3 Mac OSX Support Policy

This policy describes the platforms that are endorsed by CCIT. Any systems not endorsed will receive support on an “as able” basis. System administration and extreme measures will not be provided for non-endorsed systems. Support will also be provided at a lower priority than support for endorsed systems.

1. Only releases currently supported by Apple are considered endorsed operating systems. Previous Apple operating systems are considered not endorsed.
2. All hardware platforms must meet Apple’s minimum requirements for that release.
3. Users will purchase any software or hardware required or desired for upgrading.
4. Critical security patches must be installed on all platforms. Any system that cannot be made secure may be denied connection to the network.
5. All systems will employ a host firewall.

3 Priorities

3.1 Priority Assignment

Priorities are at the core of our support policies. When there is more support requested than we are able to provide in a given time period, then some requests must be delayed. These are the guidelines for how we determine what should be delayed.

Our priorities are driven by some basic principles.

1. Teaching needs come before other faculty or research needs.
2. Issues that affect large numbers of users are more critical than those affecting a few.
3. Fully supported users come before self-supported users.
4. Things that are broken, but did work, are higher priority than installations and other requests that can be planned.
5. Older requests in the queue are higher priority than newer requests. We may let some issues jump to the top of the queue when it makes sense to do so, such as when we can handle multiple requests in a single support call, or when an issue, such as an account creation, can be handled in a matter of minutes.
6. Priorities will adjust according to the time of year. For instance, at the start of a new semester, configuration of computers for new faculty may take precedence over less-pressing issues.

7. Priorities will be adjusted to equitably distribute ADS resources between departments and individuals.

Support requests will be reviewed on a regular basis. Scheduled builds and maintenance that have approaching deadlines will be increased in priority, if this is necessary and appropriate, in order to meet these deadlines. Priorities will also be adjusted to balance support-staff time assigned to the departments. Departments may request priority changes for support requests within their departments, effectively swapping priorities between support requests.

All open support requests are initially reviewed by the CCIT Customer Support Center to determine if the information meets minimum standards and if the priority is appropriate. Accepted support requests are set to “Open” status and assigned to ADS. Otherwise the customer is contacted to provide more information or to negotiate the priority. Support requests are then assigned to a member of the ADS team and scheduled as indicated, above.

Sometimes customers will find themselves unable adequately to manage their own systems, resulting in a large number of support requests. In such cases, ADS staff will strongly suggest alternate strategies, including moving from self-supported to fully ADS-supported status, or purchasing support from external vendors.

3.2 Priority Definitions and Examples

Priority	Items / Areas	Explanation / Description / Examples
Page	Any instance of a faculty or staff member unable to accomplish their urgent work. <ol style="list-style-type: none"> 1. Computer, software, or printer fails catastrophically. 2. Loss of crucial data is imminent without immediate action. 3. Any single-source resource, such as a printer, fails. (If the customer can print to a different printer, then the priority will be set lower.) 4. Teaching lab will not function properly or more than 10 percent of lab computers fail (responsibility of CCIT Lab Team). 5. Failure of major server (responsibility of CCIT Server Team). 6. Other unusual emergency situations that could not have been planned. 	ADS will take extraordinary measures – and will immediately page and assign a support person to a task – in a limited number of emergency situations. For example, when a computer or printer fails and prevents completion of a faculty grant proposal that is due immediately, support staff may be paged. Or when crucial data may be saved through immediate action, an immediate response may be made. ADS staff will also identify and facilitate repairs to be done by other organizational groups within CCIT and will serve as liaison, if needed, between that group and the customer.
Urgent	Any instance of a faculty, staff, or student user unable to accomplish their work due to a hardware or software failure (other than one self-caused) may be assigned as an Urgent priority. For instance, these might qualify: <ol style="list-style-type: none"> 1. Valid user cannot log in. 2. Important hardware fails. 3. Loss of important data. 4. An attack on a system's security. 5. Other appropriate Urgent-priority support. 	In general, computer problems that do not require instant response, but that prevent people from working; problems or routine support needs that have the potential to result in major loss of data or resources; assistance with a virus-infected or otherwise compromised system; support required to successfully conduct a class or educational activity; and other situations recognized by computing support staff to be emergencies will be labeled as Urgent priority, and fastest reasonably possible support provided. ADS staff will also identify and facilitate repairs to be done by other organizational groups within CCIT

		and will serve as liaison, if needed, between that group and the customer.
High	Support for routine work that has passed a deadline or is approaching a deadline.	For example, Medium priority requests that have been delayed to the point where class time may be affected if the issue is not addressed soon. ADS staff will also identify and facilitate repairs to be done by other organizational groups within CCIT and will serve as liaison, if needed, between that group and the customer.
Medium	Typical, routine support requests. Individual desktop support of fully supported users and systems (i.e. "standard builds," administered by ADS, that do not contain customized hardware, software, or interfaces). The great majority of support requests are assigned Medium priority.	Routine operating needs; standard builds; software installation; installation of printers, scanners, and other devices; general customer questions relating to department resources and services. ADS staff will also identify and facilitate repairs to be done by other organizational groups within CCIT and will serve as liaison, if needed, between that group and the customer.
Low	Individual desktop support of "custom builds" with specialized software, hardware, etc. Support for self-supported users. Support of non-endorsed operating systems. Installations and support of computing equipment used in research labs or for research or non-teaching purposes. Virus infections and other compromises of <i>non-protected</i> systems.	Custom installs or support of school-owned faculty/staff/grad student individual desktop or portable systems with a "custom build." ADS staff will also identify and facilitate repairs to be done by other organizational groups within CCIT and will serve as liaison, if needed, between that group and the customer. Virtually all Mines computer systems should be protected by antivirus software. If customers compromise others by disabling or not installing protection, then their system will be disconnected from network and their virus issues addressed as time permits.

4 Customer Responsibilities

4.1 Backup

Customers are ultimately responsible for their own data. CCIT backs up shared network drives, however customers must remember to store their data on those drives in the first place. CCIT staff will backup CCIT servers and customer directories on these servers for disaster recovery purposes, but these backups are very basic. This means that, even though we have your data on tape or disk, it may take days to restore that data. Also, the backup schedules employed by CCIT may miss important file updates. Since backups are generally performed overnight, the current day's work may not yet be backed up. Finally, these files may not be archived as long as a customer requires.

For example, CCIT may do a backup of all changes every night, and may keep two weeks' worth of changes on tape. A user who makes changes to a document in the morning and then accidentally loses the file in the afternoon will lose all of their changes if they have not otherwise copied the work to a second location. In another scenario, a user may spend weeks making changes to a document only to discover that they need to refer to an original version of the document. After two weeks all CCIT backups are purged, so unless a copy of the original is kept by the user, it will be lost. Finally, since CCIT is backing up the data of many users onto very dense media, the time to recover data can be quite long.

We strongly recommend that users make a second copy of all of their important work-in-progress. Whatever is too important to lose should be copied regularly to DVD, CD, an external USB hard drive or other storage device, or other computer system. Copying files to both the local disk drive and a network drive (where it is backed up nightly) would normally be sufficient. Customers can and should take advantage of these backups by copying their critical files to their server-based storage. ADS can assist in developing a backup strategy for customers.

4.2 Security

Computer systems connected to the campus network are expected to have:

1. Installed antivirus software that is updated at least weekly. While this applies primarily to Windows, virus protection is also recommended on other operating systems.
2. Host-based firewall protection (a standard feature in most operating systems)
3. Strong passwords and unique login accounts for each user
4. Up-to-date critical security patches

Self-supported users are expected to maintain their own systems to meet all security requirements. Any systems found to be spreading viruses or other malware will be disconnected from the campus network until the problem is resolved.

We also recommend that systems be physically secured (with cables and locks or similar methods) to prevent theft or unauthorized access while unattended. Anti-spyware software is also recommended; ADS staff can suggest appropriate programs.

4.3 Installations and Upgrades

Software license terms vary widely depending on the software package in question. Some of the software deployed in the labs is available to faculty, staff, and students. Some software can be installed for classroom use but not for research purposes, or vice versa. The terms of each license agreement are different and subject to change so, in some cases, software that had previously been installed for a customer might be denied now, and software previously denied might be allowed.

For all software purchased through the State of Colorado Microsoft Select Agreement, it is the customer's responsibility to create, process, and store the purchase document and original license documentation. The license is a right to use a particular piece of software and must be presented in the event of an audit of the school's software accounting by Microsoft. The purchase document is your proof of purchase.

When Microsoft software is factory installed on computers, then the license and key are delivered with the computer and the license is generally attached to the computer case. These stickers should not be removed, and the software is not legally transferable in any case.

For some non-Microsoft software, CCIT or various departments maintain media and site or department licenses. See the CCIT software web pages (<http://ccit.mines.edu/Software>) or ask CCIT staff about specific regulations governing the use of a particular software package.

For all other software products, it is the customer's responsibility to create, process and store the purchase document, to maintain license information, and to store and maintain the original media or backup media, unless informed by CCIT that media will be maintained centrally.

In *no* case will ADS install software that is not covered by a license owned by the customer or by the school. Please do not ask to install software for which a legal right to use cannot be demonstrated.

4.4 Indemnification

When a customer requests that ADS install one or more software products, applications, licenses, copyrighted material, or other intellectual property (products) on one or more computers on their behalf, then that customer must acknowledge and is solely responsible for the following:

1. In some cases a fee is required to be paid to the property owner before the product can legally be installed.
2. In some cases a fee is not required, but this free use may be limited to certain, constrained implementations, such as for personal use on a personal machine. In other cases, software that is free for educational use may not be free for use in research.
3. It is the customer's responsibility to maintain compliance with any End User License Agreement (EULA) imposed upon the user of these products.
4. The customer authorizes ADS personnel to install the requested products, and to accept on their behalf any on-line or written EULA that may be required to complete the installation.
5. The customer indemnifies ADS staff against any liability and personally assumes all liability that may result as a consequence of violating any EULA or other licensing or purchasing responsibility.

4.5 Requesting Computer Support

The preferred means of requesting support is by submitting a Service Request via our web interface. Using any Internet browser, support requests can be submitted by completing the form found at <http://helpdesk.mines.edu>.

Submitting this form is the quickest way to get your support request into our queue and avoid any intermediate processing. Customers should provide the following information when requesting support. The more information the customer can provide, the faster the work can be accomplished. Self-supported customers are expected to repair their own systems and install their own software, though ADS staff may provide advice or support on an "as able" or "as available" basis.

4.5.1 Reporting that something is broken

Here is some of the information that, ideally, should be provided by the customer when reporting that a system that used to work correctly is now broken. The more information supplied, the better ADS can serve the customer:

1. Exact text of error message (if any).
2. Hostname of computer.
3. Make and model of computer.
4. Operating system and version (e.g., Windows 7 Professional, Ubuntu Linux 10.04 LTS, Mac OSX 10.6, and so on).
5. Do you have a current backup of the system or your data?
6. Do you have the original CDs for your installed software?
7. History of problem
 - a. When did it first happen?
 - b. Does it always do it?
 - c. Can you recreate it?
 - d. What were you doing when it happened?

- e. Did it ever work correctly?
 - f. What were you doing when it worked correctly?
 - g. Has anything recently changed?
 - h. Have you installed anything new? Service packs, upgrades, software, shares, printers, etc?
8. Exact location of system – building, room number, and location in room.
 9. How you can be reached – phone and email.
 10. What is your availability schedule?

4.5.2 Requesting setups, installs, and changes

This information should, ideally, be provided by the customer when requesting software installation, upgrades, and system reconfiguration for desktops and offices. The more information supplied, the better ADS can serve the customer:

1. Make and model of computer.
2. Operating system and version (e.g., Windows 7 Professional, Ubuntu Linux 10.04 LTS, Mac OSX 10.6, and so on).
3. Hostname of computer.
4. Where to be installed: local drive or network drive?
5. How much free space is available on drive?
6. Software brand, name and release to be installed
7. Do you have a current license for the software?
8. Do you have the installation CD?
9. By when will you need the work done?
10. Is everything else on the system currently working properly?
11. Exact location of system – building, room number, and location in room.
12. How you can be reached – phone and email.
13. What is your availability schedule?

4.5.3 Service project request

Information that should be provided by the customers to request help with long-term projects, such as Tech Fee proposals, security reviews, and larger, strategic computing issues:

1. Statement of requirements for new work. What are you attempting to accomplish? How do you envision the system operating and appearing when the work is complete. Include details of new software and hardware to be installed. ADS can work with you to help develop this statement of requirements.
2. A deadline. By when will you need the work done?

ADS will develop a plan of action in concert with the customer, based on the statement of requirements. Components of this plan will include a design of the solution, ongoing maintenance requirements, and a timeline. The plan will identify items that need to be purchased and other input from the customer. Mutual acceptance of the plan is required for work to commence.

5 Academic Department Support Responsibilities

5.1 Availability

ADS currently provides support to the following departments:

- Chemical Engineering

- Chemistry and Geochemistry
- Economics and Business
- Engineering
- Environmental Science and Engineering
- Geology and Geological Engineering
- Geophysics
- Liberal Arts and International Studies
- Library
- Mathematical and Computer Sciences
- Metallurgical and Materials Engineering
- Mining Engineering
- Physics
- Other smaller entities on campus, on an ad hoc basis

Although we try to keep up with the demand for support, it is inevitable that the demand will outpace the available resources. To achieve the maximum efficiency, these human resources are pooled and shared among the departments as is reasonable and equitable. Nevertheless, it is still sometimes necessary to shift resources from one task to another (on the basis of priority) or from one department to another (on the basis of departmental allocation).

5.1.1 Resource allocation

At the time of this writing ADS supports 13 academic departments with 4 full-time staff employees. All requests are prioritized and worked as described above until the demand outpaces the available resources. At that time service levels in some areas may have to be lowered. These decisions may be based, per user or per department, on the type of service requested or the overall number of requests. Users deemed to be requesting an inequitable amount of support, or requesting support outside the normal services will receive less or lower-priority service.

Note that CCIT does not generally provide computer equipment (aside from computers purchased with Tech Fee funds and reallocated primarily to student use) or spare parts out of warranty. Purchase of equipment is the responsibility of individual researchers or departments. Software is installed as license terms permit. Some software is free. Some programs that are licensed on a department- or school-wide basis may be installed at no further cost. However, many popular programs must be purchased by individual researchers or departments. See the CCIT software pages for details regarding particular software.

5.1.2 Standard hours

Services are generally available from 8:00 to 5:00 Monday through Friday. Requests are logged, prioritized and queued. If the customer is required but not available at the time of support, then their request will be put on hold until they are available. Any of the CCIT staff may respond to a request depending on priority and availability. If customer interaction is required but not forthcoming, the support request will be closed until the customer is available to work with ADS support staff.

5.2 Communication

Though the preferred method of requesting support is through the Mines Help Center web form, customers may request support by email, telephone, or in-person request. These requests will be converted to Helpdesk requests, so customers can expedite their request by using the web form. No request will be prioritized and queued until the request has been reviewed for completeness of information. Support staff will initially set the priority of a request based on the above priority scheme. Priority can be changed by ADS or the department representative.

Each department may select representatives to meet with ADS personnel, as available. These meetings will be used to review the status of support, review and set priorities, plan for growth and change, plan projects such as lab and server builds, and plan for Tech Fee proposals and other purchases. Meetings are typically held once per month during the school year.

5.3 Escalation

Support requests that have been worked will not be marked "Closed" until the resolution has been discussed with the person who opened the support request or their delegate. When it is mutually agreed that the problem or request has been resolved satisfactorily, then the support request will be closed. If agreement cannot be reached, or if resolution is not being achieved in accordance with priority and reasonable expectations, then the issue may be escalated to the Academic Department Support manager.

Problems that cannot be negotiated and resolved through this process may be escalated to the Client and Web Services (CWS) Director.

5.4 Support Limitations

ADS will make a good faith effort to make supported systems functional. This is not a guarantee that supported software and hardware can be made to operate in all circumstances. It is not uncommon for one product to interact poorly with other products such that system becomes unstable. Also, due to priorities and scheduling, a customer's performance and time requirements may not be met.

Requests that are *not* supported, or supported at the discretion of staff, include:

1. Software and hardware that is no longer supported by the vendor or manufacturer.
2. Computer systems personally owned by faculty, staff, or students. An exception is made when a system is personally owned, but resides on campus and is used exclusively for business purposes. ADS may otherwise offer advice to owners of personal systems and refer them to other, possibly commercial, support services that do work on personally owned systems.
3. Off-site support. We cannot visit faculty or staff homes, or off-site computer installations, including the Edgar Mine. We can provide telephone support for otherwise supported systems. Or the systems can be transported by their owner to campus.
4. Foreign-language operating systems and software will not be actively supported. This type of support generally consumes unreasonable amounts of time, usually for the convenience of one individual. As always, ADS staff are free to offer advice to customers who wish to install and support these systems.
5. Network or network-based services or applications supported by other support groups within CCIT. These services and applications include, but are not limited to, network services, email services, web services, and applications such as Blackboard. Note that the client components of these services *are* supported by ADS. Examples of client

components are email clients, web browsers, network interface cards, and network interface configurations.

6 Summary

As noted earlier, the goal of this support organization is to provide a broad array of support to meet as many customer needs as possible *given the support resources available*. The size, diversity, and complexity of the computing environment continue to grow. While additional staff positions will continue to be sought, it is not practical to expect that enough positions can be funded to accommodate the current or projected demand for all services. Therefore, Academic Department Support, academic and other departments, and the administration must work together to find ways to deliver an appropriate support environment. The steps currently being taken by ADS are as follows:

To maximize staff efficiency, knowledge, and available time, opportunities will be sought to:

- Standardize, where appropriate and possible, software applications, lab configurations, and other system configurations.
- Consolidate or centralize, where appropriate and possible, functions and services which are support-intensive but serve large groups of users across multiple departments. These must be evaluated jointly on a case-by-case basis. Examples might be web servers and file, license, and authentication servers.
- Eliminate duplication of support-intensive services where such services are offered centrally. Examples are file servers, print servers, and antivirus-software management.

Customers *can* take steps to maximize the support available by:

- Department representatives meeting with support staff and management to discuss plans, activities, issues, and concerns on a regular basis and being constantly involved.
- Evaluating their computing environment to determine if any services or applications can be retired, consolidated, modernized, or centralized.
- Ensuring that good security practices are implemented and followed throughout their organization.
- Planning for software upgrades, changes, and installations well in advance.
- Providing appropriate self-support or local support for specialized resources, such as preparing Tech Fee proposals and processing purchase orders.

Academic Department Support and CCIT stand ready to advise and assist in all these activities.