



Fiscal Year 2009

ANNUAL REPORT

AND

GENERAL INFORMATION GUIDE

Information Technology Services



TEXAS A&M UNIVERSITY
CORPUS CHRISTI

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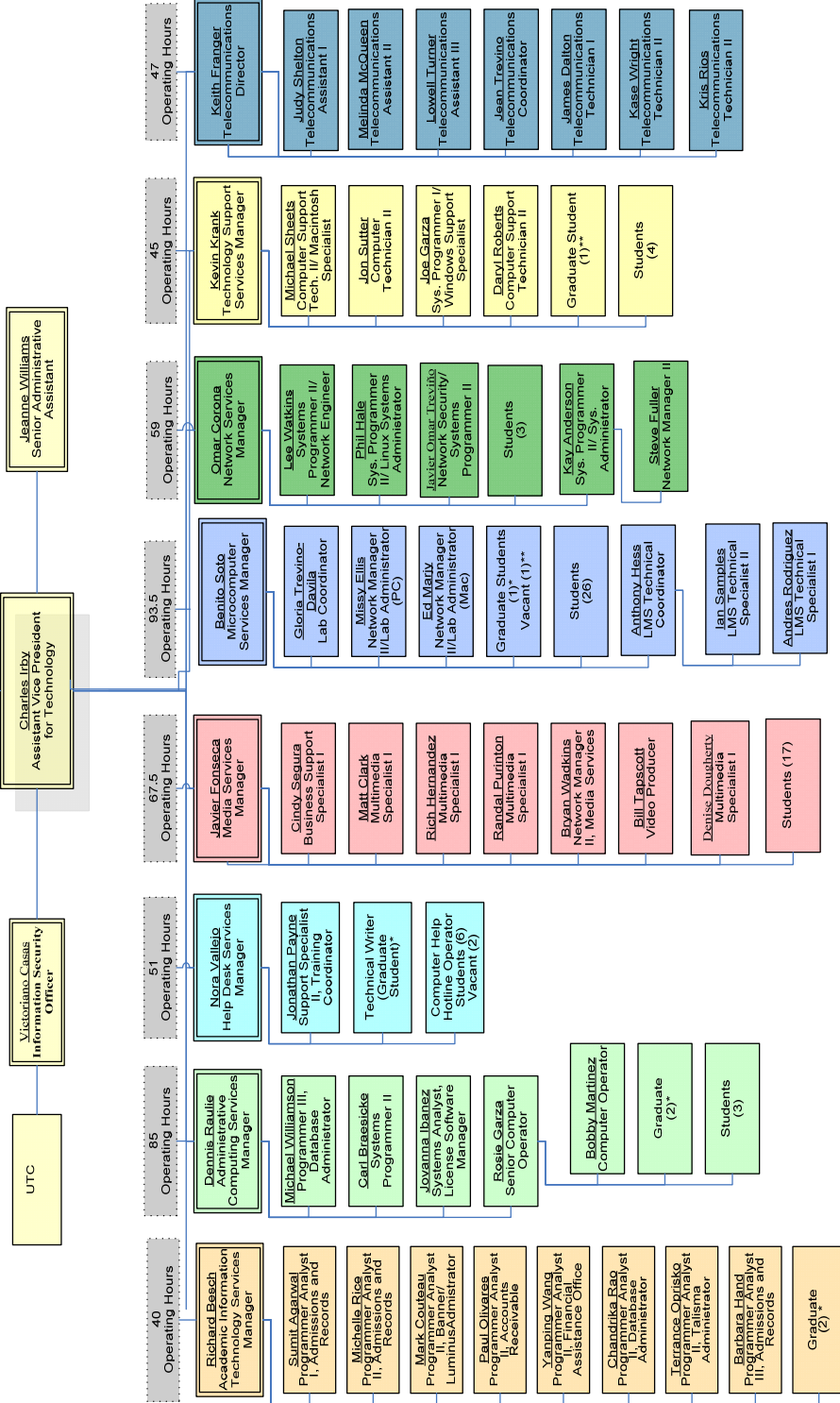
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Texas A&M University-Corpus Christi Information Technology Services Functional Organizational Chart

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Organizational Chart

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A Message from the Assistant Vice President for Technology

Twenty-two years ago a plan for technology called the Logical Campus was developed. In summary, the plan called for providing the Texas A&M-Corpus Christi campus with a data, voice, and video infrastructure flexible, scalable, and robust enough to meet the curricular needs as determined by the faculty.

Since the implementation of the plan, Media Services changed from slides, record players, and 16mm to ¾-inch video, cassette tape to ½-inch VHS, CD/DVD, digital projection, and digital media classrooms. Network Services has evolved from not existing to a copper based token ring to fiber token ring to fiber Ethernet with worldwide high-speed bandwidth connectivity and from less than twenty connected machines to over two thousand networked devices. Microcomputer Services originally supported a single laboratory of Apple II+ machines operating about forty hours per week to a campus wide laboratory system of over five hundred machines available over one hundred hours per week and a web based distance education system available 24/7, 365. The voice phone system has changed from the traditional analog system supporting only voice to a digital system that integrates traditional analog with Voice Over Internet Service and has established a wiring infrastructure model for the campus that allows a single wiring system to be used for voice, data, and television. Dedicated servers and communication have replaced the mainframe and have moved into a protected area with redundant cooling and power. Our campus technology has evolved from something special to an expected part of the fabric of the campus, like water and electricity.

Aside from the first few years of the plan implementation, technology change and growth has been a process of evolution. This institution was one of the first in the State to establish a life cycle and replacement plan for technology. It is also one of the few institutions that includes total communication infrastructure as part of the cost of new buildings.

By continuing to invest regularly in equipment, people, and training, it can be expected that huge unexpected outlay of funds can be avoided. Growth and continued modest investment will assure an infrastructure flexible, scalable, and robust enough to meet curricular and research needs and will provide the continued expected fabric needed to meet the more global goals of Momentum 2015.

On a personal note, this will be the last annual report in which I will make a comment. My retirement after three decades at the University will occur before our next report is published. The University has been a wonderful place to work. I have had the opportunity to supervise and work with an incredible team of young, bright, technically excelling employees and students to whom the credit goes for the data, voice, and video infrastructure that is flexible, scalable, and robust enough to meet the curricular needs as determined by the faculty.

Charles Irby

Assistant Vice President for Technology

Academic Information Technology Services

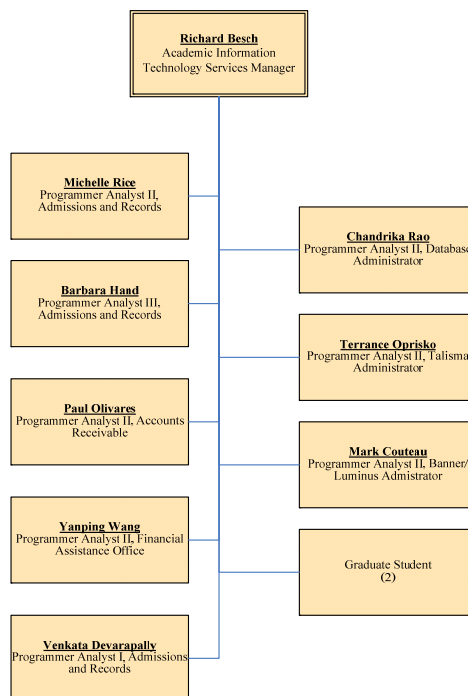
Mission Statement

The mission of Academic Information Technology Services section of Information Technology Services is to manage the operations of the Academic Enterprise Student Information System (Banner) and its third party systems.

Staffing

Academic Information Technology Services consists of nine full-time employees and two graduate assistant.

Organizational Chart for Academic Information Technology Services



Services

Academic Information Technology Services (AITS) manages and maintains the academic computer systems that make up the Enterprise Student Information System (SIS), with internal interfaces to the library, university services, health services, data warehouse, and the University Police Department as well as external interfaces to Financial Accounting Management Information System (FAMIS), the Department of Education, and Texas Common Application.

The major system supported is the SCT SunGard-HE Banner Student Information System composed of the Student/Bursar and Financial Aid modules. Third party systems currently supported by AITS include Touchnet (payment gateway), Ad Astra (classroom management), Evisions FormFusion (print management), Argos (report solutions), and Workflow (workflow management). Another major system installed is the LUMINIS web-portal that is now in an implementation stage. Other major systems supported are the Talisma Constituent Management System that provides recruiting and admissions reporting functionality beyond the capability of the Banner system and the BOSSCARS and BOSSCOPS systems. BOSSCARS is a parking management system. BOSSCOPS is designed as an incident tracking and reporting system and went live January 2009.

Software Development Services

Academic Information Technology Service's programmer/analysts directly support the Enrollment Management division and subordinate departments in day-to-day reporting and functional system operations by developing and maintaining Banner forms, reports, interfaces, and batch processes. In addition, the programmer/analysts work with the campus community in developing and maintaining the ARGOS reporting solution.

Database and System Administration Services

Academic Information Technology Services provides an Oracle database administrator and Software System Administrators in support of Banner, Talisma and other supported systems.

Current Projects

AITS upgraded Banner to version 7.5 in March of 2009 and began a major release upgrade to Banner 8.2 in June 2009. An integration project with WEBCT version 8 is also underway. The

Banner upgrade is scheduled for completion in December of 2009 and the WEBCT integration in January 2010.

Future Projects

A phased implementation of the LUMINIS portal will begin in January 2010 with an anticipated go-live date of September 2010. Phase 1 will focus on the classroom suite and student services component. Phase 2 will focus on content and additional information for staff/faculty with an estimated timeframe of May 2011. A new degree audit system will be implemented in 2010 with an anticipated implementation date of May 2010. On-going upgrades to banner to remain current will continue throughout the Academic Year for student functionality, financial aid updates, and A/R updates.

Academic Information Technology Services Manager: Richard Besch

Administrative Computing

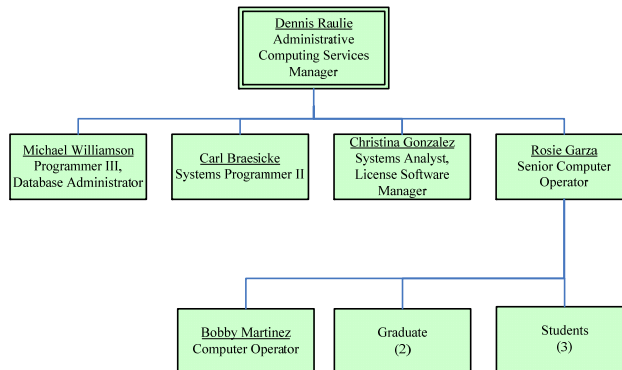
Mission Statement

The mission of Administrative Computing is to provide timely data processing, network, and software support of the curriculum and administration, commensurate with the human and fiscal resources of the institution.

Staffing

The Administrative Computing section of Media, Computer, and Telecommunications Services consists of six full-time employees, two graduate assistants, and three undergraduate student employees.

Organizational Chart for Administrative Computing



Services Overview

An overview of services provided by Administrative Computing includes information concerning management and operation of the university's administrative computer systems such as the Student Information System (SIS). This overview details the various database services used throughout the campus as well as a detailed view of software licensing and responsibilities, 2009 fiscal year. This department's other services encompasses responsibilities such as

maintenance of the print services subsystem from College Station, providing various reports to the purchasing, payroll, and accounting departments. Administrative Computing also maintains the check printing software and hardware.

Student Information Systems

Banner has entered its third full year as the replacement for the old SIS system, which is in stand-by mode and is still used for research by the Bursar, Financial Aid, and Admissions. Except for unscheduled downtime due to power/air conditioning problems and hurricanes, Banner was almost 100% available.

Banner/Luminis integration with WebCT is currently underway and is scheduled for implementation in January 2010.

Currently all Banner hardware is in a single location on single servers. To provide for high-availability and an increased degree of disaster recovery, additional Banner hardware has been acquired - a pair of identical database servers and SANs. This equipment is located in the WellNOC center at this time. Banner 8 will reside on both of these servers with production on one server and non-production instances on the other.

Databases

Administrative Computing provides a Database Administrator/Programmer for several key databases used across the department and in support of other departments across campus. A large server (owl.tamucc.edu) houses 9 separate instances of Oracle 10gR2, one instance of the open-source MySQL 5 database containing 80 individual databases, and one instance of PostgreSQL 8. The Oracle database instances allow the university to offer departmental-supported Oracle services for both applications requiring Oracle back-ends and for general-purpose Web database development. The Web server falcon.tamucc.edu has been configured with local client software for Oracle, MySQL, and PostgreSQL to facilitate PHP and PERL development. Mono-based .NET services are also available on the falcon.tamucc.edu web server.

This person also oversees the operation of a large PostgreSQL database used by the Paradocs campus imaging system. This includes, but is not limited to, generating utilization reports for cost allocation of the imaging project itself, maintaining user lists/permissions, and integrating the Paradocs profiling system with the university's local data sources including that of HR/BPP

(Human Resources/Budget Payroll Personnel) and SIS. This also includes working closely with Network Services to resolve any related firewall issues.

This person now serves as the co-sysadmin of the new LaserFiche Document Imaging system. This system includes both an Oracle Database component, which is one of the instances installed on the owl.tamucc.edu server, and a separate server for the application. Currently, this person is assisting in the deployment of LaserFiche across the campus and will be closely involved in the eventual migration of data from the legacy Paradocs system to the new LaserFiche system.

General Administrative computing (Michael Williamson, Robert Martinez, and Dennis Raulie) has developed software and procedures that facilitate placement of digital report feeds from the BPP/FAMIS systems directly into Laserfiche. This has been very beneficial in terms of reduction in departmental paper printing costs and perhaps more importantly, timely, secure access by authorized personnel to their reports and data that drive their business processes. They have also developed software and procedures to convert the existing imaging data in the legacy system to the current Laserfiche format. Being able to perform the in-house data conversion will save an estimated \$20,000 in conversion costs as proposed by a software vendor.

Along with the positive departmental feedback for our efforts, the department was nominated for and won a Laserfiche RunSmarter Award in the higher education division. Mr. Williamson and Mr. Martinez will represent TAMUCC at the Laserfiche RunSmarter Conference to be held in Los Angeles California January 2010 by presenting and demonstrating our procedures and techniques for conference attendees. This event also provides exposure to educational and user networking opportunities.

Administrative computing supports an in-house payroll system developed for punch clock-style tracking of student employees. This includes training group administrators and keeping data sources synchronized between the payroll system and Human Resources data sources.

An LDAP-based directory server, housed on directory.tamucc.edu, is maintained with current employee phone book information. This system not only provides an on-line phone directory, but is also the basis for the tamucc.edu email alias routing system as well as the authentication mechanism for various other systems such as the Argos report server. This LDAP-based system can also be leveraged in the future to provide a centralized authentication service as needed, and can be set to synchronize automatically with the Active Directory system to provide centralized password and information management. This new on-line phone directory was recently re-designed to meet the new Web standards adopted by TAMUCC.

This database administrator is also responsible for getting directory-type information to University Services for the purposes of timely deactivation of Sanddollar ID cards of former employees and accurate internal mass-campus-mail distributions. In addition, this person is responsible for populating the campus emergency notification system's database with accurate location, email and cell/office/home phone numbers. This system is intended to be used as a way to notify the Campus Community of return to work/school messages after a hurricane, but can also be leveraged to provide text messaging to all faculty/staff (and in the future possibly student if Banner schedules can be integrated) cell phones in a particular building at a particular time. In a similar fashion, this person keeps the phone/location information current in the AT&T e911 databases and the local Amcom e911 campus-police notification system.

Administrative Computing services provide backup/restoration services for all the aforementioned databases and provide diagnostic data exports and reports to those departments supported as requested. Administrative Computing provides training on in-house developed database applications as well as support (and to some extent, training) for other developers wanting to use these resources. Attention is given to security aspects of these database applications if they house any confidential or critical data.

The Administrative Computing DBA (Database Administrator) will continue to provide extra support as required by the WebCT 6 Oracle migration project as well as provide additional assistance to the maintainers of Argos and Banner-Tools/Colleges applications, specifically with regards to database connectivity. This person will continue to seek training for the currently maintained database technology as well as related tools that can be leveraged to better serve the campus community.

Licensing

Administrative Computing's licensing sector is responsible for managing and maintaining an audit server for conducting remote hardware and software audits and for developing, managing, and maintaining a software management database that keeps track of the software used throughout the university. They are also responsible for ensuring software license compliance for single and multiple users, maximizing the legal use of software, and overseeing the University's software asset inventories which are now numbering at more than 20 annually renewed licenses (e.g., Oracle, Symantec AntiVirus, Microsoft Campus Agreement, Blackboard) for over 30,000 units campus-wide and more than 5,000 licenses for curriculum and other departments.

Computer Help Hotline (CHH) Faculty and Staff Help Desk

Mission Statement

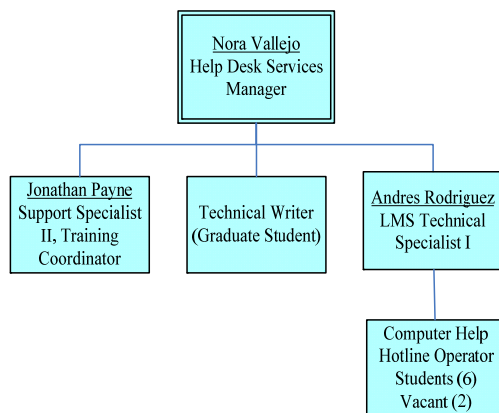
The mission of the Computer Help Hotline (CHH) Faculty and Staff Help Desk is to provide excellent customer service, telephone technical support, and training to the faculty and staff; to enhance the level of productivity and efficient and effective use of computer resources, commensurate with the human and fiscal resources of the institution.

Staffing

The Computer Help Hotline, Training, and Technical Writing sections of Information Technology Services consist of three full-time employees, one graduate assistant, and six undergraduate student employees.

Organizational Chart for the Computer Help Hotline (CHH)

Faculty and Help Desk



Full-time Staff

Help Desk Manager

Job Summary: Directs, plans, coordinates, and manages Help Desk operations. Administers and implements policies and procedures to attain Help Desk objectives efficiently and effectively. Coordinates and manages, indirectly, the work of other support personnel within Information Technology Services; this includes Microcomputer Services, Network Services, Operations, and Technology Support Services. Acts as a liaison between the Faculty and Staff Help Desk, second level support, and the campus community. Directs, coordinates, and manages the Training and Technical Writing sections of Information Technology Services.

Systems Support Specialist II (Training Coordinator)

Job Summary: Provides and coordinates formal classroom training, departmental, and one-on-one training services to faculty and staff, including technical support and consultation on all approved software. Develops, evaluates, modifies, and implements training programs, manuals, presentations, and related materials.

LMS Technical Specialist I

Job Summary: To provide centralized help desk computing support to the faculty and staff of TAMU-CC as well as supporting Academic Information Technology Services to include but not limited to Banner, Argos, LUMINIS, and Talisma.

Graduate Assistant

Technical Writer

Job Summary: Develops, writes, and edits materials for reports, manuals, briefs, proposals, instruction books, catalogs, and related technical and administrative publications that may be concerned with work methods and procedures. Research plays a significant role in the duties of the technical writer. The technical writer works under limited direction and receives assignments from the Help Desk Manager.

Undergraduate Student Employees

Computer Help Hotline Operators

Job Summary: Performs information Help Desk/support/troubleshooting functions on all approved computer related problems and/or inquiries over the telephone. Logs work orders using a call tracking software known as HEAT (HelpDesk Expert Automation Tool) and ensures that work orders that were not resolved over the telephone are assigned to the appropriate support specialist.

Services

The Computer Help Hotline operates 51 hours a week, Monday through Thursday 8:00 a.m. to 7:00 p.m. and Friday 8:00 a.m. to 3:00 p.m. The telephone number is 825-2692 and the email address is computer.helpline@tamucc.edu. The CHH is staffed by Computer Help Hotline Operators (undergraduate student employees) working approximately 15 to 19 hours per week. This is a great opportunity for students to gain real work experience in the areas of customer service, teamwork, communication skills, patience, troubleshooting skills, and training, as well as build on their own experiences on a wide range of software, hardware, network, and other computing skills.

The CHH is the point of contact for all computer-related problems and/or inquiries. The Help Desk provides first-level telephone technical support, training, and troubleshooting functions on all approved computer-related issues for both PC and Macintosh computers. The CHH maintains a knowledge base of frequently asked questions, which allows the operator to answer the more common questions over the telephone. When a problem resolution cannot be accomplished over the telephone, the CHH personnel will assign the incident by work order to second level support within Information Technology Services. Work orders are tracked through a call tracking software known as HEAT (HelpDesk Expert Automation Tool). The CHH works closely with all the departments within Information Technology Services to ensure timely processing of work orders.

Since the Help Desk is the first point of contact, it also receives computer and non computer-related calls that involve other departments throughout campus. The Help Desk is provided with information to be able to assist and direct individuals to the appropriate departments.

PC and Macintosh Software Support

The CHH provides installation support, troubleshooting, and training on various supported applications. Some examples of currently supported software are listed below. The supported software includes operating systems, word processing, spreadsheet, email packages, and Internet applications. Support involving software that is not listed is handled on a case-by-case basis. For a current list of supported software and versions, please contact the CHH at extension 2692 or at computer.help@tamucc.edu. Some examples of currently supported software are listed in Table 1.

Table 1. Supported Software.*

	Operating Systems	Word Processing	Spreadsheet	Email	Web Browser	Other
PC	Windows: XP Vista	Word: 2003 2007	Excel: 2003 2007	Outlook 2003 Outlook 2007 Outlook Web Access	Internet Explorer Mozilla Firefox	Hummingbird (FAMIS) SSH Secure Shell Secure File Transfer Client Symantec Anti-Virus Spybot WinZip TrueCrypt Identity Finder Pandion
MAC	9.x X	Word: 98 v10 2008	Excel: 98 v10	Entourage	Safari	Symantec Anti-Virus iChat

*This list is subject to change.

The other operating system supported by the CHH is Linux. CHH also provides telephone support for all faculty and staff accounts created and managed by Information Technology Services.

The department also offers telephone support for all approved:

- Hardware issues,
- Network issues,
- Printing issues related to local and network printing,

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- Dial-up,
- Issues related to viruses, spam, and spyware,
- Installation support, troubleshooting, and training are also provided for various approved drivers, such as network drivers, video drivers, etc., and
- Consulting on hardware and software.

Other departments throughout the university offer their own services and support on specialized software. If the CHH receives a call related to such software, the CHH staff is required to perform initial diagnosis over the telephone to determine if the support falls under Computer Services or the supporting department. For instance, when the CHH receives a call related to FAMIS, the CHH will diagnose the situation over the telephone. If the CHH determines that the issue is outside of the scope of Information Technology Services, the user will be transferred and/or provided with the extension and contact name of the person with whom they need to speak.

Figure 1 illustrates the number of work orders logged in by fiscal year (1996-2009) while Figure 2 notes the number of work orders logged in by month from FY 1996 – 2009.

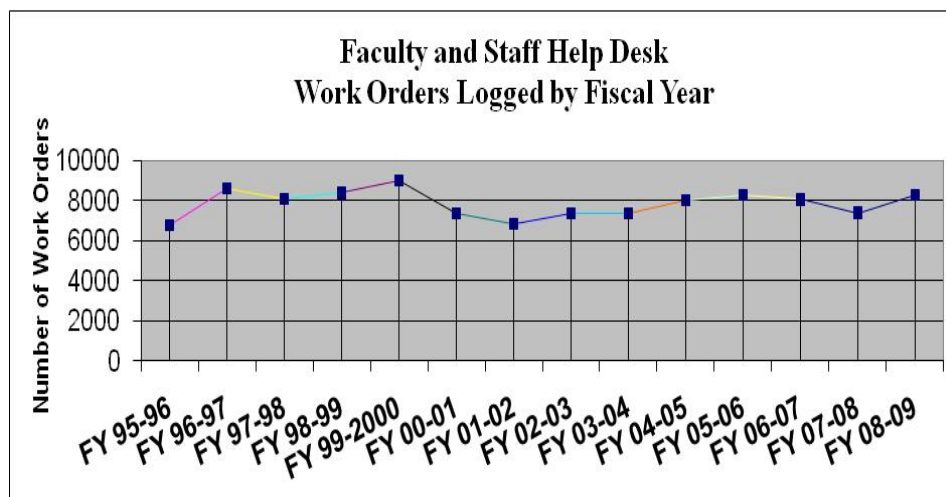


Figure 1. Logged work orders by fiscal year*

* This number does not reflect the total number of calls actually received. For instance, a work order may be logged initially about a problem. Then, CHH begins receiving several calls from different people experiencing the same problem. A work order is not logged for each individual person; rather, one work order is opened and a list of names and extensions are maintained under that one work order indicating that they are all experiencing the same problem. When the problem has been resolved, the CHH will contact each user notifying them that all is well.

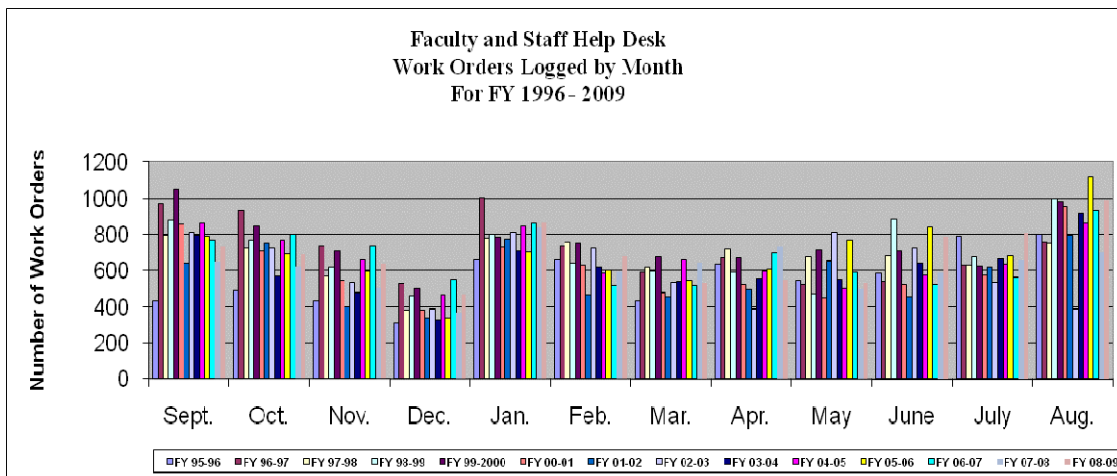


Figure 2. Work orders logged in by month

When the CHH operators are not logging calls, they follow up on open work orders, spend time reviewing work orders logged before, during, and after their shift, reviewing the knowledge base, troubleshooting, and learning new software. The CHH operators also spend time researching, communicating with second level support staff regarding new and existing work orders, and assisting other staff members with projects and training.

The rapid changes in technology combined with the growth of the user base on campus requires the Help Desk staff to keep up with new technologies and to have the necessary resources to accomplish our mission that is consistent with university objectives.

For instance, prior to the migration from GroupWise to MS Exchange, it was critical that the Help Desk learn about the migration process, MS Exchange, the email clients for both PC and MAC as well as the Outlook web access, and the differences between the web browsers. In-house training was also provided. It was critical for the Help Desk to have the knowledge and resources necessary to accomplish our mission consistent with university objectives.

Training

The purpose of the Training Department is to provide the highest level of customer service and software training to the faculty and staff of Texas A&M University-Corpus Christi in order to enhance the level of productivity and efficient use of university supported software, commensurate with the human and fiscal resources of the institution. The goal is to assist the

faculty and staff in accomplishing their objectives by offering formal classroom training, online training, specialized departmental training sessions, and one-on-one training sessions.

Formal classroom training is offered for each supported software application. Information on each session is advertised through campus announcements and on Information Technology's training web site. Classes include but not limited to training on the current supported versions of the Windows Operating System, Computer Security Topics, File Encryption (WinZip, TrueCrypt), Identity Finder, Secure Shell Client, Virus Protection, PC Maintenance, New User Computer Training, Word, Excel, Outlook, and Outlook Web Access. Additional training classes are being considered for all supported software. For more information, visit <http://training.tamucc.edu> or contact the Faculty/Staff Computer Help Desk.

Along with formal classroom training, online training is available. By adding video tutorials and detailed handouts, faculty and staff can receive the same benefits of formal classroom training from the comfort of their office.

Specialized departmental training may also be arranged. The trainer coordinates with departments to offer training specific to the department on supported applications. One-on-one training sessions are also available upon request, ensuring all employees are provided with the technical knowledge needed to accomplish his or her job duties.

The Training Department works closely with the campus community and the Faculty/Staff Computer Help Desk to determine the training needs of the university. Based on the types of work orders logged, it is possible to see how many people have called regarding specific issues such as the number of calls related to archiving. The trainer may then arrange to offer a class with topics relevant to archiving/managing mailboxes. This department also works closely with Information Technology Services staff to determine future training needs. For instance, before the MS Exchange migration, the Training Department worked closely with the key roles to ensure that training was available for the faculty and staff.

The Training Department is responsible for submitting records of Internet-based training to the Department of Information Resources. The report includes but is not limited to training programs offered and the number of participants. The Texas DIR Survey of Internet Training in State Agencies and Universities is completed biannually.

The Training Department is responsible for developing training manuals, creating presentations, working on related training materials, and evaluating software. The Training Department's aim is to offer programs that are consistent with university objectives.

Technical Writing

Following are some of the projects worked on by the technical writer during FY 08-09:

- Revised Help Desk Webpage to meet University Standard
- Media, Computer, and Telecommunications Organizational Chart
- Completed Annual Report for FY 08 including online version
- BOP IDT (Information Technology Detail) 81st Regular Session – Agency Submission
- State Records Identification Spreadsheet – Submitted to Human Resources
- Standard Operating Procedures/Templates – Draft
- WEAVE Budget Reports
- TAMUCC 2008 Corrective Action Plan (CAP)
- SACS Narrative Revisions
- FY 07-08 WeaveOnline Unit Assessment Plans
- FY 08-09 WeaveOnline Unit Assessment Plans
- White Paper on Records Management
- Email Communication and Account User References
- Job Descriptions and Online Version
- Edited various training handouts developed by the software trainer
- Compiled and developed draft Newsletter
- Technician Checklist Project – Draft
- Miscellaneous Projects

Help Desk Manager: Nora Vallejo

Media Services

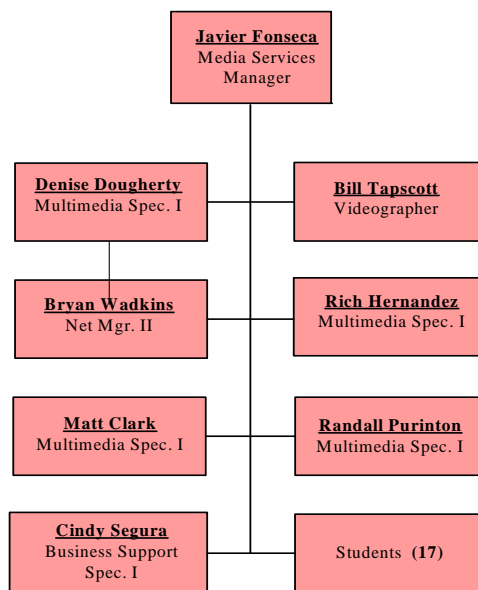
Mission Statement

The mission of Media Services is to provide multimedia and technological support for the curriculum and administration of the university. Availability and response time are closely monitored to ensure customer satisfaction. To provide the university with the latest educational technology and a talented staff to support it.

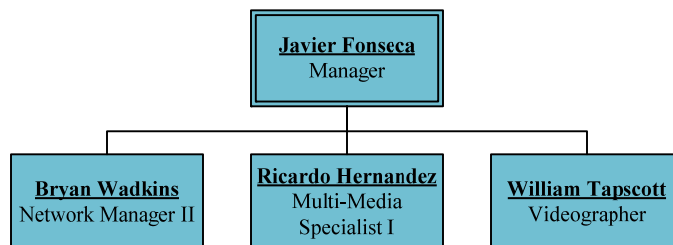
Staffing

The Media Services section of the Department of Media, Computer, and Telecommunications Services consisted of 8 full-time employees and 17 undergraduate student employees.

Organizational Chart for Media Services



As a result of a re-organization, a new organization chart for Media Services has been designed. Media Services will soon be called the Audio Visual Group. This is the new AVG organizational chart.



Services

Media Services provides a wide range of services to the faculty and administration. The department's primary function is to provide total support in the operation of multimedia auditoriums and smart classrooms throughout campus as well as providing training using such equipment. Media Services is also responsible for the distribution of audiovisual equipment, public address systems, portable computers, and LCD projectors for on and off campus university activities. Other services include video conferencing rooms, satellite downlink, film rental, and video production.

Media Services is located in Corpus Christi Hall and houses a centralized inventory of audiovisual equipment for Texas A&M University-Corpus Christi. Equipment available includes; PC and MAC computers, LCD projectors, televisions, DVD players, VCRs, public address systems, 16mm projectors, slide projectors, and overhead projectors.

Texas A&M University-Corpus Christi is a member of the Trans Texas Video Network (TTVN). Media Services currently operates five video conferencing rooms and provides scheduling, technical support, maintenance, and upgrades.

Media Services also provides video production services. Production equipment consists of a Beta cam editing system, SVHS/VHS cameras and editing equipment, a 20-VHS video duplicating center, and an audio mixing station.

An Overview of 2009

There were 2946 work orders for FY 2009. Total errors were 83, which represents an error rate of 2.8%. There were 21 responses to the survey attached to the work orders that demonstrated an 85.7% satisfaction rate. As faculty, staff and students become more accustomed in the operation of the smart classroom equipment, the total number of requests for assistance has been steadily dropping. A new assessment tool to accurately measure equipment use is being implemented

during fy09/10. We were able to replace the projectors in the first floor of Corpus Christi Hall and replaced some of the older units around campus with the usable ones that were replaced. Media Services coordinated the installation of projectors, sound capabilities, and new screens in the computer labs in Corpus Christi Hall and Center for Instruction. All general classrooms have computers less than 2 years old and are ready to migrate to the newer operating system. Maintenance of smart classrooms is always a high priority in Media Services and the result has been a down time of smart classrooms less than 5%.

TTVN had 246 videoconference connections with a total amount of 435 hours for the TAMUCC sites. The total number of TTVN supported videoconferences increase slightly for this fiscal year but there was a significant decrease in the total number of hours. The decline can be attributed in part to the increasing use of dialing point-to-point IP based videoconferences, rather than use TTVN support and thus not being reported through TTVN.

Figure 1 illustrates monthly total work orders from 1996 to present while Figure 2 shows the percentages of computer requests compared to the total number of work orders.

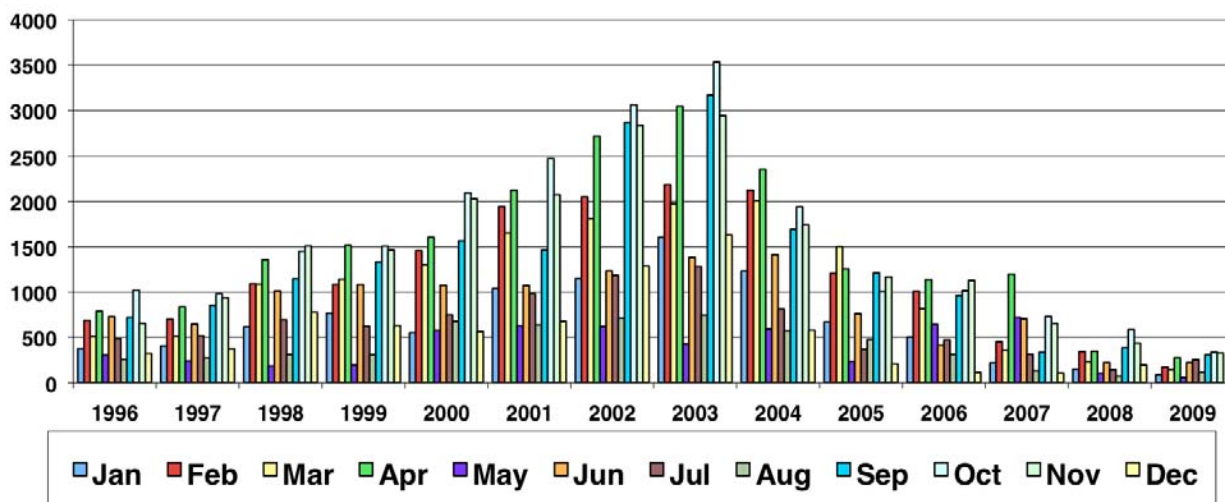


Figure 1. Total Work Orders by Month 1996-2009

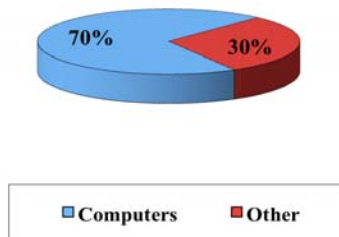


Figure 2. Percentage of computer requests compared to the total work orders

Media Services Manager: Javier Fonseca

Microcomputer Services

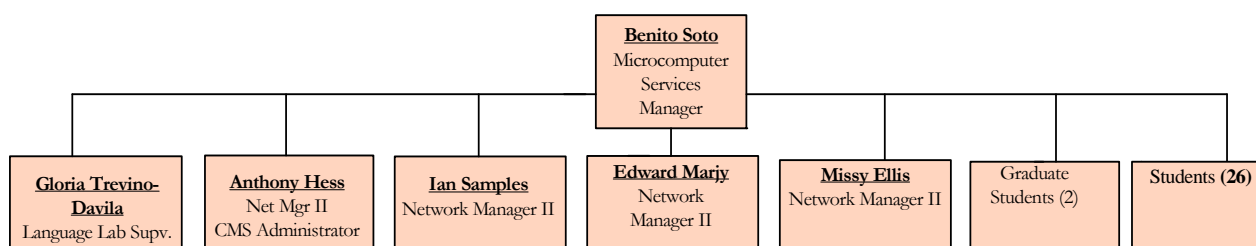
Mission Statement

The mission of Microcomputer Services is to provide effective, efficient, and innovative solutions within the operation of student computing resources, which include computer-based classrooms, wireless computing, and online distributed education. Microcomputer Services provides a customer-oriented approach to technology support for the university's curriculum as determined by the faculty and approved by the institution and administration, commensurate with the human and fiscal resources of the institution.

Staffing

The Microcomputer Services Department consists of 6 full-time employees, 2 graduate assistants, and 26 undergraduate institutional student workers.

Organizational Chart for the Microcomputer Services Department



Services Overview

Microcomputer Services (MCS) is founded on principles of customer service. Customer service involves not only support for students, but also faculty, administration, and guests.

Microcomputer Services provides support services for all student Kestrel email, dial-up, and Novell computer accounts as shown in Figure 1. We administer over 1318 courses requested for 2008-2009 representing a substantial increase over 874 courses in 2007-2008. Microcomputer Services also directly oversees almost than 500 machines for student use. We are also responsible for the installation, administration, and support of wireless for both faculty and staff. Our department is also responsible for the administration for the pay for print management system, which has resulted in \$68,823.22 dollars collected this past year. Our department also coordinates the large computer purchases to establish bulk price points to provide greater discounts.

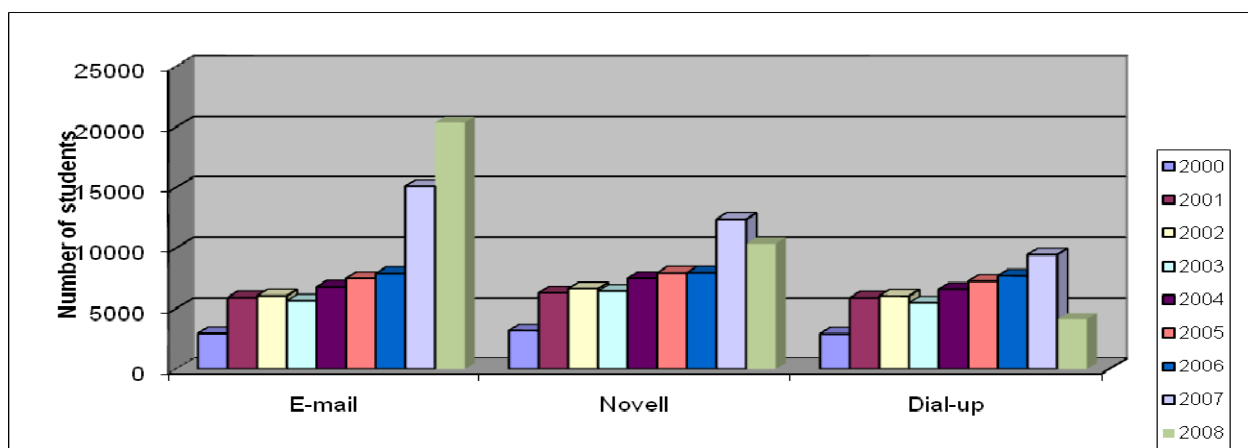


Figure 1. Total Number of Requested Student Accounts

Wireless

Microcomputer Services currently supports wireless network that serves faculty, staff, students, and visitors. MCS has been able to provide close to 90% building coverage on campus as of 2008-2009. We have seen tremendous growth in our wireless system as demonstrated below in Figures 2. This past academic year we saw an average of 321 users, with maximum

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simultaneous connections at 760, which was an increase over the 265 average users with simultaneous connections of 598. Therefore, we have seen a jump of over 20% in both areas. Due the increase popularity of multiple devices owned by our customer base, we had requested additional infrastructure and personnel to meet the ever-growing demand. Both were acquired late in fiscal year 2008-2009.

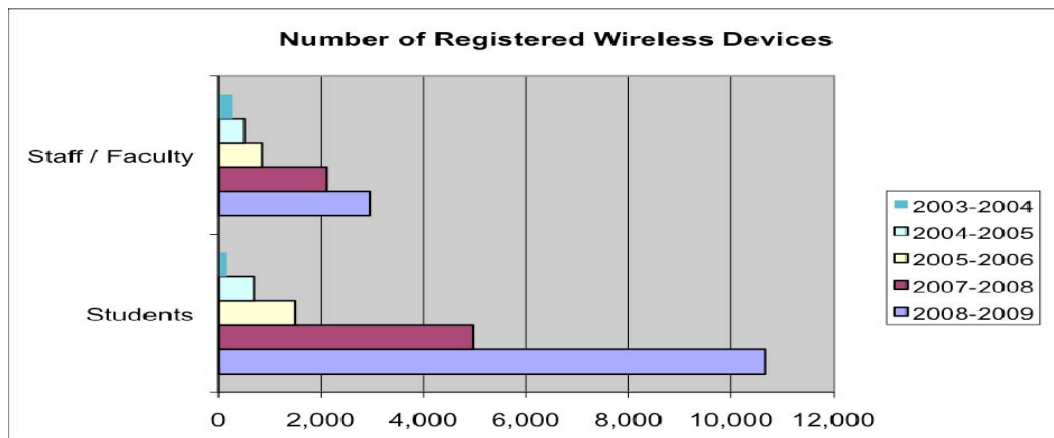


Figure 2. Number of Registered Wireless Devices

Special Event Setup

The department also provides direct physical support of most mass computer setups on and off campus. Microcomputer Services also handles the technical support for all of the orientation and Island Day events, which involves the setup of over 50 computers for registration support. We also distribute technology for the First Year Writing Program at the end of each semester.

WebCT

Currently we are running the application WebCT version 4.1, on two Linux servers. The course and student data for WebCT resides on an enterprise class storage area network (SAN), specifically designed for data preservation. WebCT has been able to provide our users with 99.4980% availability. The SAN is a Dell CX 300 and is currently maintained by the WebCT administrator. The SAN has had an uptime of 99.5436 % this past year.

Microcomputer Services is responsible for the management of WebCT accounts as well as course shell administration. We are continuously seeing huge growth in the number of classes each semester and 2008-2009 was no different. We continued to provide all faculty and students phone based support 365 days a year.

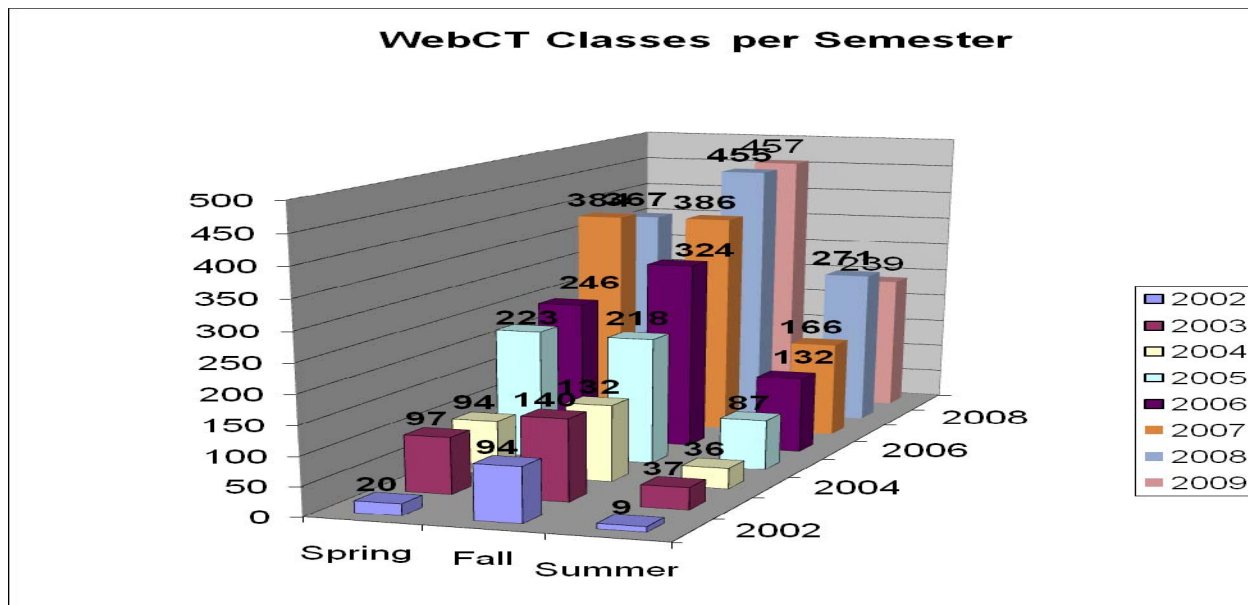


Figure 3. Number of Students in Language Lab

Lab Support

Microcomputer Service's support of the student labs focuses not only on making sure that all the physical networking essentials work, but also on supporting students at a software level. The department runs a student Help Desk that provides one-on-one tutorial support for students as well as technical telephone support. Furthermore, it provides training for the general student body on the basics of office products, email, and web usage. Microcomputer Services is also responsible for the upkeep and scheduling of the Training Computer Labs located in CCH 106 and CCH 224. Another service offered is working with various colleges and departments on campus to install software needed to hold administrative training or academic classes. Our department not only ensures the operations of MCS designated labs, but provides secondary support for other labs as well. This past year we picked up one lab, which was the academic athletic lab.

The following information in Tables 1 and 2 reflects the total number of both computers and computer lab sites that are maintained by *Microcomputer Services*.

Primary Labs Duties: Hardware / Software Repair, Install, Setup, Configure

Table 1. Primary lab duties

Lab Location	Number of Computers	Type of Computer	Environment
CI 222	31	PC	Classroom
CI 223	31	PC	Classroom
CCH 206	50	PC	Classroom
CCH 231	25	Mac	Classroom
CCH 209	28	PC	Classroom
CCH 210	25	Mac	Classroom
CCH 207	25	Mac / PC	Lab room
CCH 230	28	PC	Open Lab
CCH 201	31	PC	Open Lab
CCH 232	44	PC	Open Lab
CCH 106	20	PC	Banner Training Room
CCH 224	24	PC	Training Room
CCH 240	25	PC	Classroom Ad Hoc
Mobile Cart I			
Mobile Cart II	25	PC	Classroom Ad Hoc
Subtotal	412		

Secondary Labs Duties: Hardware / Software Repair, Install, Setup, Configure

Table 2. Secondary lab duties

Lab Location	Number of Computers	Type of Computer	Environment
Career Services	18 computers	PC	Lab room
Art Museum	11 computers	Mac	Lab room
Kinesiology Lab	15 computers	PC	Lab room
Nursing Lab	50 computers	PC	Lab room
Athletics Lab	28 Computers		
Physics Lab	12 computers	PC	Lab room
Subtotal	134		
TOTAL	546 Computers / Laptops		

Language Lab

The Language Lab is a specialized lab that falls under the section of Microcomputer Services. This multimedia facility serves as an enrichment center that supports the foreign language curriculum. Freshman level courses require weekly graded lab attendance in order to complete specific assignments correlating with the concepts presented in the course. Instructional design, courseware evaluation and implementation, database administration and inventory and technology maintenance are the responsibility of the Language Lab Supervisor. Microcomputer Services, through the services of the Language Lab, also provides consulting of hardware to other lab managers on campus, as well as to the administration and faculty. Below are the statistics for the language lab, which include 2008-2009.

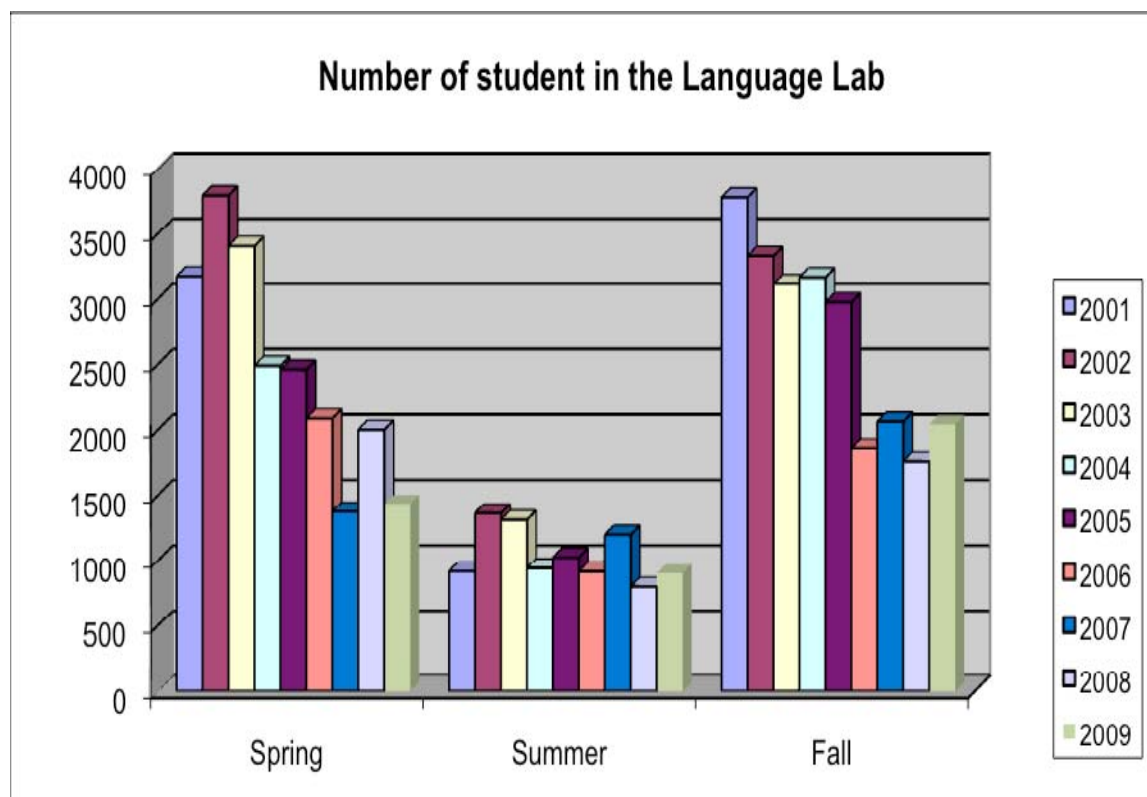


Figure 1. Number of students in the Language Lab

Print Management System

The Pharos Uniprint print system known as "\$andPaper" continues to be maintained by Computer Services. This system continues to be successful in centralizing student print technology, maintaining security, integrating \$anddollar, and allowing Campus Copies to keep up with physical resources such as toner and paper. Table 3 illustrates the system's statistics since start of the print system.

Table 3. Pharos Uniprint System statistics for 2004-2009

Term	Pages	Cost per Page	Total
2008-2009	813,707	8 cents	\$68,823.22
2007-2008	744,858	7 cents	\$62,370.83
2006-2007	862,503	7 cents	\$62,956.33
2005-2006	866,774	7 cents	\$62,272.21
2004-2005	1,080,200	5 cents	\$56,090.76

Microcomputer Services Manager: Ben Soto

Technology Support Services

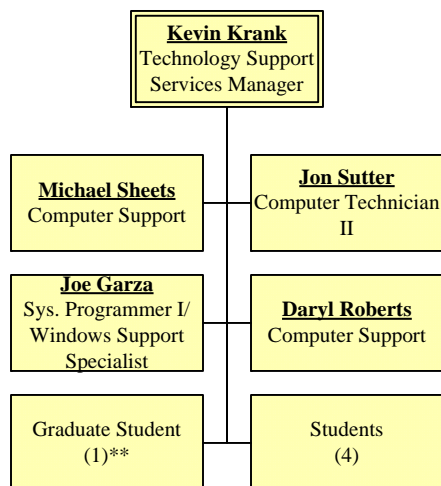
Mission Statement

The mission of Technology Support Services (TSS) is to provide effective and efficient computer support for the university campus, commensurate with human and fiscal resources of the institution. The priority of TSS is to provide professional, courteous customer service.

Staffing

The Technology Support Services section of Information Technology Services consists of five full-time employees, one graduate assistant, and four undergraduate student employees.

Organizational Chart for Technology Support Services



Full-time Staff

Technology Support Services Manager

Job Summary: Performs highly responsible administrative and complex technical supervisory work, directing all activities associated with Technology Support Services personnel. Directs, establishes, plans, and implements the policies and procedures to support the organization's PC,

and technology support services. Manages the deployment, maintenance, support, and upgrade of servers, PC hardware/software/operating systems, and associated peripherals.

Systems Programmer I

Job Summary: Analyzes, tests, implements, maintains, and documents computer system software. Work involves supporting Microsoft Windows-based applications, including operating systems, utilities, and other control modules, analyzing user hardware and software needs, and recommending upgrades or new purchases. Work also involves support of Windows-based servers, connectivity to them, and PDA/Smartphone access to e-mail, calendar, and contacts.

Computer Support Technicians

Job Summary: Performs and assists in skilled technical work in the creation, design, construction, installation, testing, modification, maintenance, repair, documentation, and support of electronic, computer, and computer-related systems and equipment. Work includes performing routine and advanced maintenance and repair operations on electronic and mechanical computer equipment, and participating in the design of special purpose computer-related equipment.

Undergraduate Student Employees

TSS Student Workers

Job Summary: Assist technicians in performing routine and advanced maintenance and repair operations on electronic and mechanical computer equipment. Student workers respond to work orders under the direction of technicians, and make detailed entries into the HEAT database.

Graduate Assistant

Special Projects South Texas Art Museum

Job Summary: Assists in special projects with the South Texas Institute of Art. Performs onsite triage and hardware/software computer support at the museum. Provides transportation of equipment to the university that needs repair and reports directly to the manager of Technology Support Services.

Services

The TSS Department provides support, installation, and maintenance of computer systems, operating systems, software, computer peripherals, and electronic equipment for faculty, staff, and students. This department also configures computers for local and wide area networks, diagnoses and resolves connectivity issues in relation to the network at the client level. TSS monitors the specifications and development of computer technologies, documents vendor performance, price, and/or technology updates, and makes recommendations for purchase as well as purchases and inventory parts for PC and other electronic equipment repair.

This department maintains a dialogue with users to ensure that all hardware and software applications are working properly on new computer installations and upgrades and that the data is transferred to the proper directories. TSS tracks work orders and makes detailed entries of work performed through the HEAT database and maintains the computer repair shop, benches, tools, and test equipment.

TSS needs to investigate all computer problems, regardless of the manufacturer and warranty status, and determines if the problem is hardware or software related. If the problem is software related, TSS will repair the problem using appropriate resources. If the problem is hardware related and the computer is under warranty, the responsibility to repair the computer belongs to the manufacturer. This department makes warranty repairs only for companies with which it has made an agreement. (Apple and Dell), and coordinates with vendors on the repair of equipment that the department does not have the resources to repair.

Technology Support Services provides custodianship of the Health Services Medicat/Propharm server, Quest Diagnostic interface server, Student Affairs Odyssey Judicial server, the PIE server, Accounts ACL server, and Purchasing Blue Ridge server. This department also makes sure that:

- all Windows 2000/2003 servers are administered, including account maintenance, and housed in CCH 110 (Cold Room)
- ensures physical security of the servers and client/server encryption in accordance with TAMU System and State of Texas regulations

- installs software on user workstations, tracks license usage, and maintains operation of software
- provides tape backups of critical data and backups are periodically tested to ensure integrity while some server data is stored on the SANS
- monitors, evaluates, and implements server OS updates as needed
- provides terminal services as needed for software maintenance
- provides VPN connection for Quest Diagnostics with triple-DES encryption.

Work Orders

This section details the total number of work orders for 2009 as illustrated in Table 1. Additionally, Figure 1 and Figure 2 demonstrate the average days to complete hardware and software support work orders for 2005 through 2009, respectively.

Table 1. Total Number of Work Orders for 2009

Hardware Support	999
Software Support	1705
Macintosh	178

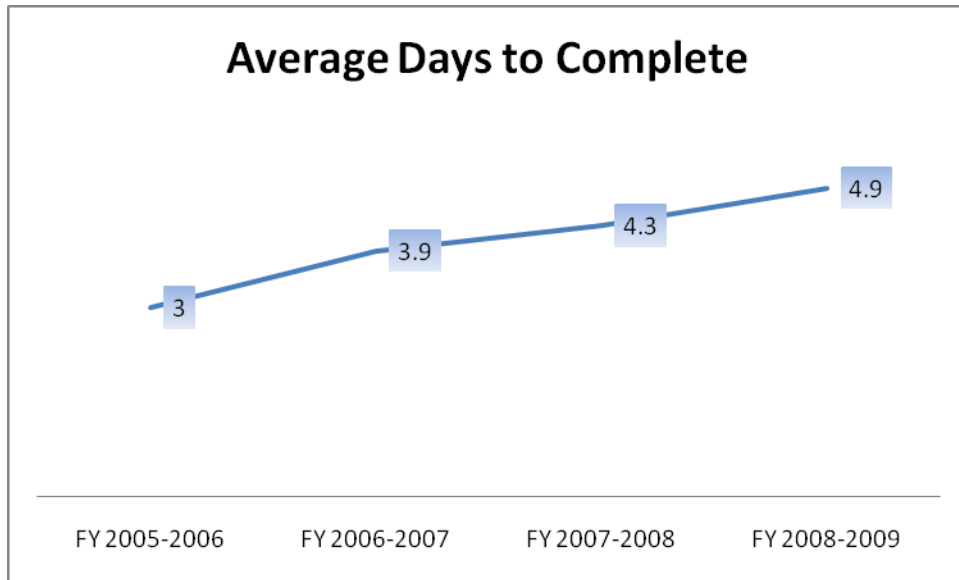


Figure 1. Average Completion Days for Hardware Support 2005-2009

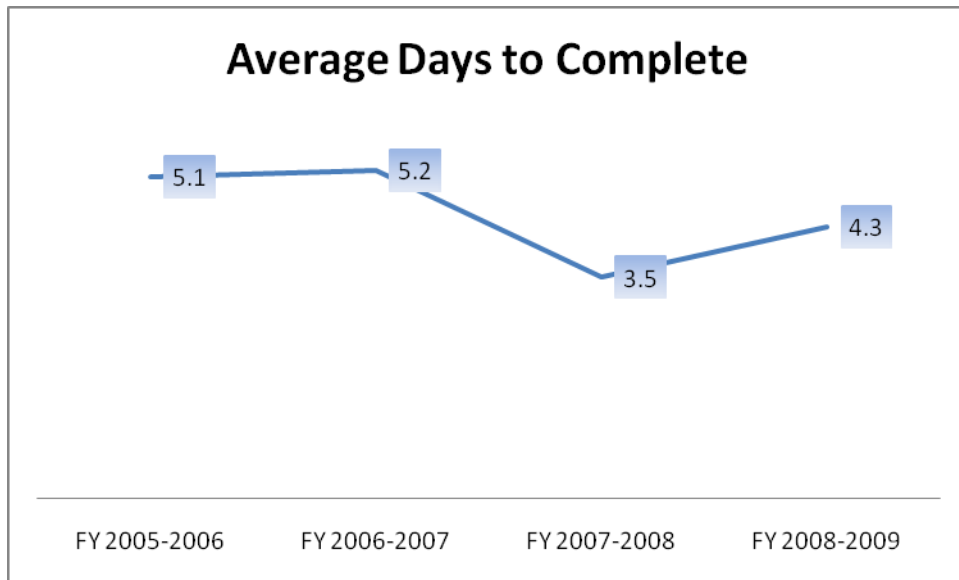


Figure 2. Average Completion Days for Software Support 2004-2009

The Macintosh average days for completion for 2009 were 3.8 days. That makes a combined average for Technology Support Services of 3.5 days to completion. We are pleased with this information especially because there were more calls this year than in any previous year. While the time to completion has remained constant over the years, we are considering reevaluating the method by which we report call resolution. Not all calls require a rapid response. Moves, adds and changes do not need as fast of response as a computer that is not operable. We plan to prioritize call types and have call resolution reflect that structure.

Hardware Support

This past year, all of our technicians have renewed Dell's Warranty Parts Direct certification. The program allows them to order warranty replacement parts over the Internet and avoid having to wait in queue and speak to Dell's phone technicians. This prevents redundant troubleshooting steps usually required by Dell's phone support in order to dispatch the parts needed.

Aside from standard repairs such as replacing motherboards, hard drives, etc., we have been heavily involved in the end user migration to Microsoft Active Directory. In addition, because of the ever-changing environment of computer hardware and software, in-house training and research in the latest technology is essential.

Hard drives and power supplies are the most likely component in a computer to fail. Backing up data is and has always been important, although some faculty and staff still do not take the time to do so. If drives simply have a few bad sectors, we are (in most cases) able to recover most of their data. In worse cases, we use advanced software to attempt to recover lost data. We have also incorporated backup systems for the university's president, provost, and vice president of finance to ensure no data loss in such an event.

Hardware diagnosing has gotten much quicker due to standardization of computers and hardware thanks to our department making recommendations on computers to order for end users here at the university. Training of student workers by technicians has also led to much faster diagnoses in the field.

Software Support

TSS provides computer software support to the university. Operating systems (all Windows and Macintosh Operating Systems), as well as application software (Microsoft Office products,

Adobe, SPSS), are supported through this department (see Table 2). TSS also offers troubleshooting for problems that may arise due to viruses and spyware. Aside from troubleshooting, TSS also offers upgrade services. Users can have their computers upgraded to the latest operating system, or the latest version of a supported software product. Supported applications include, but are not limited to the software and systems shown in Table 2.

Table 2. Software support

Operating Systems	Word Processing	Email	Web Browsers	Other
Windows: 95/98 2000 XP/Vista Windows 7	Office Suite: Office 97, 2000, XP, 2003,2007	Outlook/ Outlook WebAccess, Entourage	Internet Explorer, Netscape, Mozilla Firefox, Safari	Adobe Products, Symantec Antivirus, Hummingbird (FAMIS), Putty (SIS), SSH Secure Shell
Server 2000/2003				
Mac: OS 9.x OS 10.x				

Some software products that we support are not purchased through the Information Technology Services department. Software, such as Adobe products, is the user's responsibility to purchase. TSS will assist in the installation of the software once the users have purchased it.

TSS also offers support for computers running Windows Server operating systems. We assist in troubleshooting, as well as installation, and configuration of the operating system, and if the system is housed in CCH 110 (Cold Room), we will provide custodianship of the server.

TSS supports mobile phone connectivity to Exchange. Windows Mobile, Palm OS, BlackBerry, and iPhone operating systems are supported. These devices are configured to allow users to access their E-mail, Calendar, Contacts, and Tasks. TSS also provides limited support for other 3rd party mobile applications.

Macintosh Support

This has been a busy and productive year for the Macintosh platform. Office 2008 was released for Mac. Compatibility of the new program suite was tested and the program was widely deployed across campus.

In addition, there have been regular computer repairs and maintenance. Quotes are provided as needed for new computers around campus. The rising popularity of the iPhone has created a new frontier of support. The iPhone 2.0 update with Exchange support was tested and has been set up for many iPhone users at the university.

Types of Support Associated with Equipment

Network servers

- Set up/install new servers.
- Troubleshoot hardware and software issues.
- Carry out corrective procedures necessary for proper system performance.

Desktop computers

- New computer setup and installation of standard applications.
- Troubleshoot hardware and software issues.
- Replace defective components.
- Install additional peripherals (printers, scanners, external storage devices).

Notebook computers

- Same as desktop computers.
- Mobile broadband setup and support.

Printers

- Set up and install local and network printers.
- Troubleshoot and resolve printing issues (paper jams, paper feed, print quality, connectivity, faulty components).
- Install maintenance kits.
- Replace faulty components.

Scanners

- Set up and install new scanners.

- Troubleshoot and resolve scanning issues (connectivity, software compatibility, faulty components).
- Replace faulty components.

Fax machines

- Troubleshoot and resolve fax machine issues (paper feed, paper jams, and poor print quality).

Monitors

- Install new monitors.
- Troubleshoot and resolve display issues (no power, no output, faulty output, defective components).
- Replace defective components.

Exchange Active Directory (AD) Domain

Information Technology Services now has a variety of new abilities in computer network and desktop management. Some of the services include remote password reset, Microsoft and Antivirus updates, and computer virus scans. We hope to be done with the campus wide deployment soon.

Blackberry Enterprise Server

Technology Support Services now offers the Blackberry Enterprise Server to enable better services for PDA users at the university. BES works with cross platform PDAs and has several features were not available with our previous server.

Spyware and Virus protection

Once again the campus, as well as the rest of the world, was hit by a major virus and its variations. The antivir virus infected a lot of computer on campus and required manual removal. We are currently deploying Symantec Endpoint Protection.

Windows Office 2007

Office 2007 is currently being installed on new computer setups and Office 2003 can be upgraded 2007 with a work order request. Office 2003 is still available, as is support and training for both Office Suites.

Microsoft Windows 7 O.S

TSS staff has been testing operation of Windows 7 over the past year. As Microsoft support for Windows XP will eventually end, we are ready to embrace upgrades, deployment, and support.

Technology Support Services Manager: Kevin Krank

Telecommunications Services

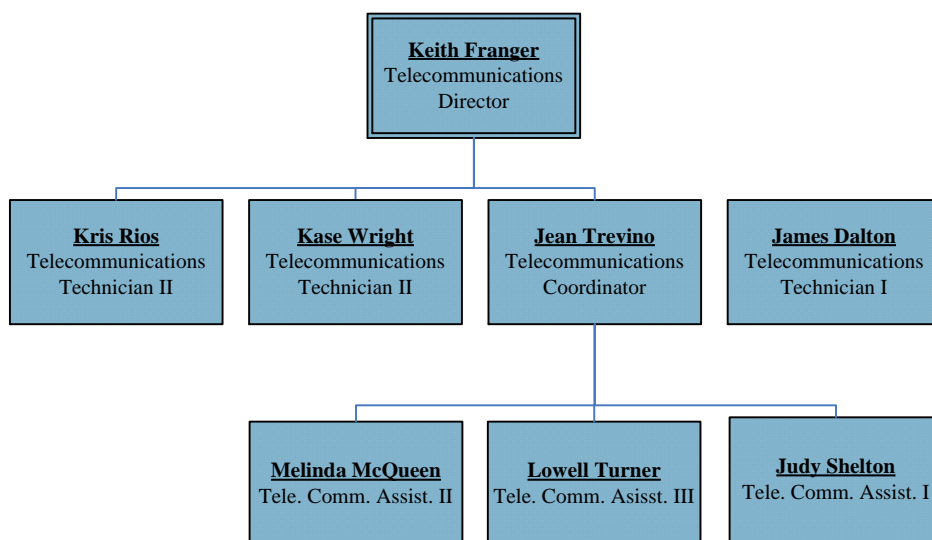
Mission Statement

The mission of Telecommunications Services is to provide quality, cost-effective telecommunication services to the campus community, to support the university's mission, and to continually evaluate new technologies, which will help enhance service to faculty, staff, students, and tenants, while maintaining service levels equal to 99.999.

Staffing

The Telecommunications Services section of Information Technology Services consists of eight full-time employees.

Organizational Chart for Telecommunications



Services

Telecommunications Services supports approximately 4000 active ports from our Nortel PBX, which consists of 3439 telephone lines and Voicemail system with 2766 mailboxes. The department works an average of 3510 work order items annually. In addition, the department maintains an extensive conduit system and infrastructure that connects all buildings on campus with copper and fiber optic facilities. The department also provides direct support for Cborg

Department of Media, Computer and Telecommunications Services

Texas A&M University – Corpus Christi

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card access, Siemens fire and building control, Network Services, federal, state, and private corporate tenants.

The department maintains contracts for services on the PBX, Voicemail, and E911 systems as well as contracts for local, long distance, and transport of data and video services, while providing operator services to the campus as well as billing and the Helpdesk. Telecommunications Services is integrally involved with all construction on campus to ensure that services required by the users are available at move in.

The department strives to maintain feature capability in order to keep pace with new trends and technologies, which is vital in meeting the department's goal of matching or exceeding national average of reliability. Voice Over IP (VOIP) is the technology of the future and we are actively testing and evaluating this new technology to ensure that when the university requires this technology that we will be ready to implement the best platform available for the campus. Sustaining rigorous security systems is critical to this process.

Director of Telecommunications: Keith Franger

Information Security Officer

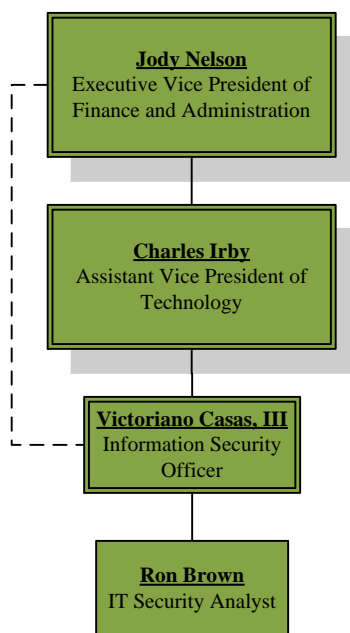
Mission Statement

The mission of the Information Security Officer is to promote an efficient, effective, and secure educational and business environment for all Texas A&M University-Corpus Christi students, faculty, and staff by providing leadership, guidance, training, and inspiration.

Staffing

The Information Security Office has two full time staff. The Information Technology Security Analyst reports to the Information Security Officer.

Organizational Chart



Responsibilities

The Information Security Officer (ISO) provides feedback, expert analysis, and recommendations to Texas A&M University-Corpus Christi's executive management on all information security matters.

It is the responsibility of the ISO to develop and recommend policies and establish procedures and practices, in cooperation with data owners and custodians, necessary to ensure the security of information resources assets against unauthorized or accidental modification, destruction, or disclosure.

The ISO serves as the primary liaison to the Texas Department of Information Resources on all matters regarding information security.

Information Security Officer: Victoriano Casas III

Appendix B:

Server Information

The Systems group oversees the primary servers on the campus. The applications this unit is responsible for include DNS, DHCP, web services, email, Active Directory, LDAP, student lab support, database servers, centrally managed anti-virus, and a host of other services. Falcon, the primary campus web server provides accounts for various purposes, including web publications. In an effort to comply with centralization of computing resources, 248 virtual hosts that reside on Falcon. The main student Linux server provides official email accounts to students from acceptance through 5 years past last activity with the campus, it currently has 20503 accounts. Other Linux servers provide critical university services such as DNS, DHCP, Time, and database services.

The Windows infrastructure started mainly to support the Microsoft Exchange email system, but has grown to include Anti-virus support for desktops, group policy installations of campus-wide software, and secure access to users' desktops from off campus. In addition, the Windows administrator manages servers for applications that are run by other departments on campus.

The two main projects for the Systems group over the past year have been moving into the new Network Operations Center and virtualization clusters. The Network Operations Center move was completed before Spring Break without causing any significant interruption of service to the campus community. The virtualization clusters are an ongoing effort that will provide for high availability and disaster recovery of critical servers as well as reduction in cost for hardware and software, and a platform for further centralization of campus server infrastructure. In order to provide as much flexibility as possible, two virtualization clusters are being created; one is Windows based and resides inside the campus firewall, the other is Linux based and resides in the DMZ. With this configuration, most server requests can be met. Currently, the Windows cluster is in production, the Linux cluster is still in test.

The following information begins with Table 1 and provides brief definitions of the operations performed by various servers located on campus. Server Availability Reports from January 1, 2009 to December 8, 2009 are illustrated in Tables 2 through 6.

Table 1. Explanation and definitions

TERM	DEFINITION
conn	Refers to the ability to ping an interface on the host
ftp	File Transfer Protocol
http	Hypertext Transfer Protocol
telnet	A device access protocol and an application
cpu	Central Processing Unit (average <i>available</i> CPU load on the device)
disk	Disk space
msgs	System Messages (notices and warnings)
procs	Needed processes on the device
smtpt	Simple Mail Transfer Protocol
ssh	Secure Shell
pop3	Post Office Protocol version 3
dns	Domain Name Service
imap	Internet Message Access Protocol

In the above listing of definitions, the definition of “conn” contains the term “Ping” and it refers to the amount of time that the server has received a signal from a monitoring computer, which indicates the server availability. All other terms (cpu, disk, dns, etc.) refer to the amount of time that the individual applications are up and running within the server.

Table 2. System availability.





 100% available	 97% and above	 less than 97%	 No stats for period
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Table 3. Microsoft Windows Server Uptimes











Windows Systems	conn	cpu	disk	dns	msgs	procs	smtp	svcs
Server 1	99.92	-	-		-	-	-	-
Server 2	99.95	-	-	-	-	-	-	-
Server 3	99.96	-	-	-	-	-	-	-
Server 4	99.89			-			99.95	99.92
Server 5	99.98	-	-	-	-	-	-	-
Server 6	99.98	-	-		-	-	-	-
Server 7	99.98	-	-	-	-	-	-	-
Server 8	99.97	-	-	-	-	-	-	-
Server 9	99.93			-			-	99.92

Table 4. Linux Server Uptime

Linux Systems	conn	cpu	disk	dns	ftp	http	imap	msgs	pop3	procs	smtp	ssh
Server 10	99.98	99.98		=	=	99.97	=		=	99.97	=	
Server 11	99.98	99.63				99.97			=		99.99	99.98
Server 12	99.96	=	=	=	=	99.96	=	=	=	=	=	99.99
Server 13	99.99	=	=	=	=	=	=	=	=	=	=	
Server 14	99.76	99.83	99.84	=	=	99.04	=	99.84	=	99.98	=	=
Server 15	99.23	=	=	=	=	=	=	=	=	=	=	99.93
Server 16	99.99	97.96			=	99.95	99.92		99.95	99.97	99.95	99.95
Server 17	99.99	99.10		=	=	=	=		=	99.99	99.63	99.99
Server 18	99.98	99.99		=	=	=	=		=	99.97	99.92	
Server 19		=	=	99.99	=		=	=	=	=	=	
Server 20	99.97	=	=		=	99.96	=	=	=	=	=	
Server 21	99.94	99.86		=	=	=	=		=	99.91	=	99.88
Server 22		98.94		=	=	99.96	=		=	99.98	99.86	
Server 23	=	=	=		=	99.73	=	=	=	=	=	99.62
Server 24	99.99	99.99		=	=	99.99	=		=	99.98	=	99.88
Server 25	99.99			=	=	99.96	=		=	99.99	=	
Server 26	98.93	=	=		=	=	=	=	=	=	=	=
Server 27		98.50		=	=		=		=			
Server 28	99.32	=	=	=	=	99.31	=	=	=	=	=	99.98

Table 5. Novell Server Uptime

Novell Systems	conn
Server 29	99.98
Server 30	99.49

Table 6. Server Functions This document contains very brief descriptions of the main functions of those Linux and Novell servers monitored by watchdog.tamucc.edu.

Linux servers

Term	Description
Server A	First Year Writing/English Web Application server. We maintain the system and core software on this server for the First Year Writing/English department.
Server B	Primary Campus Web Server and anonymous FTP server
Server C	Health Monitoring system networks
Server D	Primary Student Web/Email server; provides all students with a Sendmail email account and personal web page space. It also houses the mailing list server.
Server E	Primary SPAM and virus email filtering servers for all campus email systems
Server F	Primary DNS and DHCP server for the external network
Server G	Primary DNS and DHCP server for the internal network
Server H	Acts as primary email routing server for the tamucc.edu campus email address system, primary Mail Exchanger for the campus, and the OpenLDAP server.
Server I	Hosted in Laredo, this server provides web presence in the case of emergency or evacuation of the main campus.

Server J	Primary database server for campus databases
Server K	Slash web content server. The server hosts four main slash sites: ethics.tamucc.edu , philosophy.tamucc.edu , technology.tamucc.edu , and triadk.tamucc.edu .
Server L	Secondary DNS and DHCP server for internal network
Server M	Server Health Monitoring system. Watchdog monitors the health and status of all Computer Services servers. It will send page notification on errors to the proper server administrators
Server N	Provides internet email access to the Exchange email system

Windows servers

Server I.	Active directory domain controller, Windows DNS server, and certificate server
Server II.	Primary File server
Server III.	LAN sweeper and software update server
Server IV.	Exchange front end server
Server V.	Exchange back end servers
Server VI.	
Server VII.	Active directory domain controller, Windows DNS server
Server VIII.	Active directory domain controller
Server IX.	Document imaging system