Section I   Executive Summary

Section II   Organizational Highlights

1. ResNet

    Possibly one of the most important projects for the Networked Workstation Support team (NWS) this year was ResNet, which gives students access to the Emory Network as well as the Internet from their residence hall rooms. This access was provided via client applications provided by NWS. In order to concoct the perfect blend of power and ease of use in the applications, many hours were spent researching and testing various client applications by the NWS team. Once a decision was reached on which applications would be used, the packaging began. NWS team members worked to create an installation program that would be flexible enough, yet easy to use so that the widest range of students' needs could be met. NWS team members participated in training sessions to show the RCCs how to use various installation programs. Similarly, NWS team members were often called upon to do on-site troubleshooting of the more difficult computers to install. These visits often included installations of the ethernet cards as well as configuring the software and hardware for use with the Emory system. Coordinated efforts involving the NWS team, as well as the Computer Store and the RSC/RCCs helped to make ResNet the success that it was this past year.

2. Eagle Services

    ResNet's counterpart, the Eagle Services client suite, was designed for departmental use at Emory. It includes many of the same applications as ResNet, such as a worldwide web client and a telnet client, but it also includes other applications of little use to students. These applications include a 3270 client so that staff members could use their Financial Accounting Systems, or FAS. The Eagle Services package underwent many of the same processes as the ResNet package, such as research and testing of the applications, as well as development and testing of an installation program. All of the workstations now running the Eagle Services client suite have been configured by members of the NWS team, which includes on-site visits to install the ethernet card as well as any necessary cabling, before the installation of the software could occur. The use of Eagle Services presents a united interface to the various types of computers among Emory faculty and staff, thus providing an even more powerful and easier way for all of the Emory campus to be productive via interconnectivity.

3. Emory Connect

One of the greatest advances in Emory Interconnectivity Technology this past year was Emory Connect. Providing a new level of dial-in use never before achieved, home users can now use multiple protocols from their off-campus workstations. This multi-protocol service allows for faculty and staff members to access servers on campus via the AppleTalk network, or through Novell networking. Even more rewarding was the advent of Password Authentication Protocol, or PAP. Using PAP has enabled the migration of dial-in programs away from using troublesome scripts. This eliminates a great deal of the troubleshooting aspects previously burdening the NWS team. The off campus interconnective possibilities brought about by Emory Connect have greatly expanded the scope of the productive worker, making telecommuting a real life option. This concept was the driving force behind the NWS team members' creatation of a Local Support Conference, in which they presented many ideas. The best of these ideas make up the Emory Interconnectivity Technology that is in use today.

4. More Novell Servers on Campus

With the addition of twenty-two new Novell servers on campus this year, five of which are a part of EUSHC, the vastness of the Emory Network under the care of NWS continues to grow. These additional servers in EUSHC have added to the already increasing overhead of paperwork and coordination caused by the firewall separating it from the rest of the network. Also, with these new servers come new workstations, and new workstations mean more installations by NWS team members, detracting from their time to administer support to workstations already in place. Despite the addition of all of these servers, and the workstations that they serve, the number of NWS team members to support all of the servers and workstations on campus remains constant.

5. Novell v4.1 NDS

Connecting all of these new servers has been made somewhat easier by the implementation of Novell v4.1, which features Novell Directory Services (NDS). NDS has made the maintenance of the Novell network much easier, allowing for more generalized administration of the entire campus. Similarly, NDS has laid the foundation for a more comprehensive backup scheme, which will ease the chore of backing up vital Novell servers by allowing it to be done from one location.

6. Campus-wide Ethernet/IP Conversion

With the advent of more efficient and faster network technologies, such as ethernet, it became evident that the smaller, older, slower async networks on campus would need to be replaced. This process began with the individual departments going through a consultation phase in which their needs were evaluated and recommendations made for new hardware and software to use on the new network. NWS saw need for, and soon instated, both hardware and software standards to ensure the highest rate of compatibility and ease of use with the Emory network. As a result, many existing workstations were upgraded by NWS team members, and many new workstations were purchased. Many departmental workstations that were on the older Emory IP subnet were simply migrated over to the new one, with minimal upgrades required. This migration unified Emory's domain into a single subnet and was the result of the diminishing supply in the old subnet. After all the installations and conversions were complete, the new IP numbers of every workstation were recorded along with the faculty or staff member's name who would be using the station. This IP registration allows for tighter security and more effective use of electronic resources by restricting them to accept only registered workstations.

7. Meeting Maker XP Upgrade

The use of the University's personal scheduling program has seen surprising growth in the last year. As of September 1st, 1995, there were only 582 accounts. As it began to grow, it was obvious that it would soon need to be upgraded. On June 21st and 22nd, the Meeting Maker XP server underwent an upgrade from version 2.5 to version 3.5.1. This newer version provides more flexibility, allowing access now from UNIX and OS/2 workstations, as well as support for sending email to people without accounts on the server, thereby reaching a larger number of the Emory community. The upgrade went smoothly and now today there are over 900 accounts out of 1,100 licenses currently being used.

8. Mandarin

Mandarin is the result of a consortium of universities to create a secure environment for a single client to access more than one server in order to coalesce different sources of information into an intuitive and easy to use interface. Many IBM mainframes on campus contain extremely sensitive data, such as students' grades and bills. When the need to safely convey information of this level across a network arose, it was met by Mandarin. Driven by a security protocol known as Kerberos, the client accesses servers on campus with sensitive data with the 'two keys' approach. The lock on the door of the server has two key holes, both of which are required in order for the client to access the data. The first key is provided the client itself, but the second one is generated by another server that can verify the client and it's intentions, and decided whether or not it should have access to this information. This allows for an extremely seamless and secure environment to bring together data from the Bursar's office, the Registrar, as well as the Book Store, or any other server on campus, into a single user interface that any student, staff, or faculty member can use.

9. The Callaway Project

The construction of the new Callaway Building called upon NWS to greatly upgrade, reorganize, and even install new workstations for the departments moving into it. The departments each had their respective NWS team member

responsible for their department conduct a walk-through in which each workstation's configuration was recorded. Using this data, NWS team members then constructed a recommendation for each department including the cost of each upgrade. NWS team members then proceeded with the upgrades and installation of new workstations, registering the IP numbers of each workstation as they proceeded.

10. Emory Parking and Community Services

The Parking Office recently went through a massive upgrade, as their lease of ticketing technology from Clancy had expired. They purchased a new Novell server, running 4.1, as well as seven new workstations, leaving three workstations to be upgraded. They also purchased three workstation printers, a single networked printer, and multiple hand-held computers for use by the field officers. Once the installation of the new equipment was complete, their new ticketing software vendor, Cardinal, came in to work with NWS on setting the software up on their network.

11. Emory Residential Facilities.

With their final move back into the Dobbs University Center, the housing department needed assistance in migrating their workstations over to their original site. This included resetting the IP numbers, as well as registering them. In addition, the workstations were reconfigured with the Eagle Services client suite, and connected to their new Novell 4.1 server.

12. Emory Facilities Management

Facilities Management received a new Novell 4.1 server, as well as a CD-ROM server. The Novell server was also configure to be an inter-departmental email server with over one hundred clients, and also connected to it now are five networked Hewlett Packard printers.

13. Windows 95

Since its release in August of 1995, Windows 95 has been billed as the successor to Windows 3.x and Windows for Workgroups 3.x. NWS as well as other support organizations within ITD have been testing and evaluating the operating system and how it interacts with services already in place on the Emory network. Windows 95 has been accepted into the small cadre of operating systems supported by NWS, although due to some incompatibilities and problems caused by its native file sharing method, that part of it remains unsupported and users are strongly dissuaded from using it. The clients NWS distributes for Windows 95 have been tested thoroughly and interact well with the Emory system as it is.

14. Web Forms

The advent of technologies such as the web has made it possible to stream line processes such as billing. Through the use of on-line web services, an NWS team member can fill out a form detailing his/her use of their time to support a department. This form is then sent to a database that sends an email

notifying the department as well as a confirmation email to the service provider. The use of such a form has made processes such as billing much easier, and therefore more precise. Also, the on-line storage of billing logs makes it easier to look them up. Other uses for web forms include troubleshooting guides and frequently asked question guides that the end user can navigate themselves, saving a call to NWS.

15. ISDN Trial

With the demands being placed on bandwidth growing everyday, the need to investigate means of faster mobile access is being realized. The promise of ISDN is a great one, with transfer rates of up to over 5 times that of 28.8 modems. This technology has been thoroughly tested, and the costs are continually being real evaluated as equipment prices drop. The hardware and software requirements are also being evaluated since they will directly affect the hardware and software standards that NWS recommends.

16. Conversion to Multi-line Phones within NWS

The number of calls coming into NWS has increased dramatically since the number of servers and workstations on campus has likewise increased. The use of new multi-line phones has made it possible for NWS to increase its level of Customer Service by allowing one phone line to ring on several desks. This allows for anyone to answer emergency calls, without having to be listen for just one phone to ring.

17. 2nd to 3rd Floor Move

The NWS team was also moved this past year to the 3rd floor where they now reside. The move was little more than a disruption, since the staff was unable to perform its supportive role while moving its own equipment around, and setting up all the workstations to work on the new floor. The NWS team performs its tasks on the 3rd floor just as well as they did on the second floor.

Section III   Organizational Goals

1. Packaging

Packaging continues to be an ongoing goal for NWS. The need for a standard suite of applications is become more and more apparent, and it is NWS's goal to have a single set of cross-platform applications for each package. This will not only reduce costs because of licensing concerns, but also make support a lot easier since there will be fewer applications to learn.

2. Windows NT

Microsoft's powerful 32-bit operating system presents an interesting blend of power and interconnectivity. It is for this reason that NWS has committed to evaluating the feasibility of integrating it into our network, as well as evaluating its internal architecture to measure how it interacts with the Emory system. The entire process will be run as an ASR procedure, and eventually NWS will prepare a position paper stating its views on the subject.

3. Documentation on the Web

In an attempt to head off as many unnecessary calls as possible, NWS hopes to construct a web site that will serve as a central repository for documentation and trouble shooting guides. Users will be able to access this information more easily and it will contain the answers to many common questions.

4. DHCP

Dynamic Host Configuration Protocol promises to be a new beginning in the area of portable computing. Not only does it allow for complete plug and play network access from anywhere, but it's leasing of IP numbers promises to make administration of campus resources much easier.

5. Local Support

NWS plans on making the workload on itself as light as possible so that it can find time to do it's other projects besides support. In order to do this, NWS would like to train local support people so that one day they might be self sufficient and able to solve all of their own problems. This would be accomplished by passing along a group of unified methods and procedures in order to insure that policy is maintained. This joint effort would also allow us to learn from the successes of local support personnel all over campus.

6. Create and Promote Hardware Standards

With the vast number of platforms and applications in existence today, NWS feels that is must institute hardware and software standards in order to keep the campus' workstations and servers able to run existing software. These standards will be very specific and will be firmly enforced, since they are for the benefit of all involved. Also, the support of fewer configurations will lead to easier levels of support, since the amount of variance between workstations will be limited. These standards will also ease the frustration of the customer and provide NWS as well as the entire campus with direction in workstation configurations.

7. Partner with EUSCH

In an attempt to unify support of the Emory Community, NWS would like to form a partnership with EUSCH in which one can learn from the other, and help to ease the strain of making the two networks work together through the firewall. Standards wherever possible would help to facilitate the partnership, such as standard workstation configurations, servers, help desk system, and contractors. All of these aspects would add to the strength of the partnership and therefore increase the strength of the support of the Emory community.

8. Development Skills

The NWS team would like to further develop its own skills as well. Ongoing training has always been an integral part of any support agency's ability to perform effectively and efficiently. With added support for training, the personnel would become quicker at accomplishing basic tasks, and even be able to attack more difficult tasks on their own, allowing other members to concentrate on their own tasks.

Section V   Current Services (Responsibilities)

What services or product do we generate/accomplish?

  1. Direct Support to Customers servers, workstations, and printers (Hands-on)
  2. Equipment Recommendations and Quotes
  3. Consulting
  4. Server support i.e., MM, ITD Enterprise, WWW, Power share, and NWS share
  5. Packaging
  6. Training local support
  7. Direct support of EMORY University & affiliates

Part II of V
Who are our cumstomers?
EMORY University an Affiliates.

What is their expectation or why do we provide the services or the product?

Dependable services, and to help them be more productive with the use of
computers in diverse computing environments, and will be able to get access to
authorized data and information with relative ease, i.e, email, FTP, TN3270,
etc.

NWS provide knowledge and expertise in integrating distrubuted/client server
architecture with existing systems and emerging technologies. To supply
solutions to customer needs with selected standard services, to make
integration of workstations, servers and network easily manageable.

What are the necessary support staff skill to do the work?

Install, configure and troubleshoot network adapters
Being able to provide support for all client packages
Troubleshoot and diagnose workstation,servers, printers connectivity problems.
Being able to providing Hardware, software, network printing solution.

Have they changed this year and why?

NWS has maintain skills and proficiency with regards to existing and emerging
architectures, technologies, and standards. This would included, PPP, NT
Workstation, DHCP (portable computing), Windows 95, and Unix installer training
experiences.

4. How many Types of requests do you get for a service or product.

Providing technical support for departmental servers.
Advise local support on system security.
Provide training for workstation group and individuals as needed.
Troubleshooting
Upgrading and Modifying
Testing, Resource and developement

Implement LAN installation
Support calls for client packages
Analyzing and consulting on Workstation, LAN, and System Integration including:
Post-sales consulting
Hardware and software integration
Hardware and software purchases
New Lans or additions to existing Lans
Intergrating customers solutions
Departmental soulutions
Assisting customers with ordering hardware and software

Section VI   Administration/University Busines support
Outline the critical areas of support, ranked in importance.

Installation (Workstation, Servers)
Trouble Calls (Emergencies)
Telephone Support
Email Support
VoiceMail Support
Security access to servers
Consulting
Product quotes

Value added:
Packaging
Server Installation
Individual training
Personalized traing of Local Support
Server Installations
Consulting, Product quotes
User groups
Indirect support Conference
Boot Camp
Resnet training
Educating Vendors

Access Project:
DHCP
NDS
Project Installations:
Resnet
Eagle
Callaway
Parking
Facilities Management
Meeting Maker
PPP
ISDN
Remote Access
Emory Connect Plus

Administration 1st floor Renovation
Ben Franklin Academy Connection to Campus
Campus Planning Ethernet installation
Carter Center T1 Link connection
Chemistry
Ecology Mod Building
Book Store Lan connection between Bookstore and One card server
Music
Psychiatry Ethernet connection to Clinic offices
Turner Village, Resnet connect back to Dental school
Whscab
WMB, Ethernet connections
Pathology ?
Theology, Ethernet installations
Router convesions: Whscab, North Campus Hub, Dental Bldg.

Section VII   Academic Support:
Resnet
Emory Connect
Lab setup (Economics)
Unix workstation support
Pegusus
Pmail
WWW
Participating in Software Server (Task Force)
Supporting Professors

Section VIII Public Service:
Fern Ban, with Online Library Resources
Druid Hill Highschool, with Online Library Resources
Ben Franklin Academy, with Online Library Resoures and Online Internet access.
Conference Center
Carter Center, with Consultation and security