OARTech Notes for February 12, 1997

Galen called meeting to order at 10:05. The April agenda is almost finalized. Some features include LDAP and SMTP as it relates to Novell. The minutes were submitted for approval and seconded.

Nemtalah from Cleveland State: Shared Versus Switched Technology.

They have hired an in-house consultant to help design a new telecommunications infrastructure. They're weighing issues ranging from ATM to the desktop to shared ethernet to the desktop. It because clear quickly that something better than plain ethernet would be necessary for the next generation.

Five basic questions were defined to submit to the other sites around Ohio. The plan was to be able to go to upper management with a clear response. The surprising result was the great diversity of responses that actually came back.

There is not a general agreement in how many ports a segment should have. One approach suggested is to implement an ATM backbone, then plug existing hubs into switched port. News and web servers can be put on an individual subnet. What is the traffic level? What is the average packet size? What is the destination; are the hosts all outside the VLAN? What is the projected growth? What applications will be rolled out in the future? Do you trust the vendors to roll out truly compatible ATM in one year; two years?

Suggestions: the file servers should have lots more bandwidth than the PCS they serve. Be sure to have Netware 4.1x. Have multiple NICs in the server. Get rid of IPX traffic by going to Netware 4.11.

Should the "edge" devices have high capacity? The big expense is the chassis itself, not the port card in the chassis. Buy the capacity now, even if the technology changes. Use full duplex cards in anticipation of video conferencing needs. Virtual LANs are possible with switching. Security is enhanced. Approximately 10 megabits is required to provide NTSC grade video. ATM to the desktop? ATM will be needed to assure the quality of service requirements; ethernet can not guarantee data delivery to meet video needs. This is not a large issue now; but will grow in importance.

College of Wooster uses switched ports in the dorm for security. HP and Ungerman-Bass have hubs that aren't truly switched. The secure hubs zero out the packet data for packets whose Media Access Control field does not match the port's address; all packets are still broadcast.

Vendors: Bay, Cisco, 3Com, Cabletron, Anixter, Bay, Xylan... Tolley (sp?) Group has a good white paper available. Should you buy from a Gold Plated vendor? Should you buy the low dollar vendor? Several people related archaic presentations by old-school vendors. Vendors' quotes dropped rapidly when confronted with low cost alternatives. What about the wiring plant? For a completely new network the wiring plant could be better than half the budget. AFIT estimates that a switched environment costs about $1000 per port with about $250 of that being cables and termination. Most people are still using multi-mode fiber. To reduce cost, pulling a composite cable with both single- and multi- mode fiber in the same jacket would be a good idea.

Anita Cook: Ohiolink's directions on authentication.

Galen wrote to Tom Sanville at Ohiolink in early January. Galen conveyed OARtech's concern of how member institutions will be able to address their needs to out-source dial-ups and other connectivity and still maintain accessibility for Ohiolink.

The basis of Ohiolink started in a telnet environment with primarily locally authenticated VT-100 emulation. Ohiolink's offering has grown to over 60 databases that are provided by vendors across the globe. Complicating the issue, not all Ohiolink member sites subscribe to all the databases. IP management has become a much more complex task.

It would appear the answer might be found in the fact that all member sites to have one common element: the III system. Ohiolink has asked III to develop an applications programming interface to allow the library patron database on the III system to be queried. There are a lot of back end technical issues that have to be addressed in addition to producing the API. Passwords will have to cached, distributed and timed-out as needed. There is a single ISP that is able to provide individual accounts that may be reliably tied to a known and static IP address range.

The Ohiolink posture is that IP checking will not change in the near future. The real limiting factor, then would appear, to be III's willingness to

complete the API. Pat Limpach: he has four potential ideas. Galen: ISP independent, Geography independent, no long distance call required. Pat: all campuses have the remote access problem. Ohiolink is the biggest and only common need. This is a good opportunity for all the universities to have to come together to design a flexible and scalable system. Can OARnet take on the role; it doesn't appear to want to be Ohio's statewide ISP in this role. What about a proxy server on each campus? This has the advantage that each campus can have local control of verifying users and designing the API. What about a user-based system such as Kerberos 5? It is scalable, but hard to implement. Will custom clients be needed? Probably not.

Is Ohiolink unique? OPLIN, for one, has the same problems. What about other state systems? Note that the database vendors are imposing the requirement. Note that the clients are actually attaching to machines at the vendors, thus authentication has to be re-done at the vendors' premises. John: Should we be taking a look to see what other vendors are doing in parallel fields, such as newspapers?

Here is an applicable URL:

http://underground.org/papers/access_control/

Kevin Earp: Remedy and HP Openview in action....

Starting 12/29, OARnet went to 24/7 continuous support. In the last few months of 1996, significant efforts were made to acquire and train staff. Most staff is relatively new, at least to OARnet. The quality of applicants was high. There are nine staff for help desk, LAN manager Gail and Kevin. One of the first big projects was to get the client engineering information current and entered on the system. The front end is Remedy. NOCOL is a package that went in ahead of HP Openview. NOCOL essentially sequentially pings all devices in its database, then issues a warning when multiple pings have been missed. The other element was ensuring that the only the correct contact people at the various sites initiate contact. A good control measure of requiring a billing ID before making configuration changes was put into practice.

New staff spend a few intensive days with Kevin. Next, the staff spend time learning documentation. In the last phase, the staff are phased into the working environment. Kevin foresees having high quality [on line]

documentation will speed the staff's phasing in and increase the quality of support.

Kevin is working on developing tighter lines of communication with other NOCs. Hopefully, this will allow more timely notification of clients when there are troubles in the Internet outside of OARnet's own domain.

[Demonstration of Remedy] Much of the information is pre-initialized on entry of the site contact. The problem resolution screen tracks action items and solutions and front-ends a very good report writer that allows individual tracking or generation of general solution models for later use. Action items started on one shift are automatically promoted to the next shift. Action items are automatically promoted to higher levels of criticality the longer they've been in the system.

Kevin recommends taking a look at the Help Desk Institute web page for ideas for choosing a good help desk package. The back end for Remedy in OARnet's case is Sybase.

[Demonstration of NOCOL] The package has four levels of monitoring. The levels provide increasing filtering to reduce visual clutter.

LUNCH Break

Jim Anderson: INN at Oberlin

History of INN

Originally written by Rich Saltz

Based on RFC 1036 (article format) and 997 (NNTP)

"Administrators will find that INN is fairly compatible with B and C News." The configurations
are quite different.

Version 1.4 was the first official release by Rich Saltz.

There are "unoff" unofficial versions as high as V1.4unoff3.

V1.5 has been released in beta form by Rich. 1.5 supports PERL and TCL hooks, PGP support, new expire options, etc.

Oberlin's environment:
DEC Unix 3.2
166 MHZ EV4 Alpha
128 M memory
/, /usr, /var, and /tmp are on one 4G drive
the news files are striped across three additional drives

Read the release notes and the FAQ. They are very complete. news.software.nntp has lots of ongoing discussion about supported configs. Appendix A of the FAQ has Norman's install guide, which is a very useful tool outlining a typical set-up.

News feeds file: This defines what sources provide various news transfer.

Flowsum is a statistical processing package from the UK that will provide a lot of information.

Be sure to periodically pull down and install the list of moderators from the news config news group.

Nnrp access file: defines who is allowed to receive groups from your system. Can partition groups with IP based authentication. Change the default: as delivered, it is open to the world!

News.daily is the program that oversees everything. Runs three times a day. Expire runs each time; the job takes about 2 hours. A typical expire run dumps 650,000 articles.

Flowstats is a set of PERL scripts that provide detailed analysis.

INNREPORT is a PERL script is a program that generates an HTML report from the newsdaily
output.

Clarinet is a commercial service that provides Reuters and UPI news articles. The latest version is in HTML and includes pictures that accompany the original articles.

The UUnet ftp site has INN white paper. Isc.org has the INN software.

Flowstats is from J. M. Line. Innreport is from Tabien Tassin (tassin@eerie.fr).

Jim's address is anderson@ocaxpl.cc.oberlin.edu.

Pat: TAC update. They're planning on putting in a dedicated T1 to Ann Arbor for Power Pages.

Greg: The T1 is in. The hardware for setting up the direct link to UMI will arrive next week. Currently, if you do a citation search, it is being read from a CD on a PC based image server in Dayton. This will change over to using UMI's magnetic media to supply the image. The change should be transparent to the end-user. The benefit will come in not having the overhead of maintaining the CDS in Dayton.

An RFP is being sent around to see if there is a vendor that is interesting in writing an umbrella user interface for the current collection of data bases.

They're beginning to talk to the OSC about the possibility of housing some very large databases. The system would use an SGI computer workstation for interacting with the database.

Gene: Gene brought in a Cisco 5200 access server with cards for 48 virtual modems and ISDN PRI line feeding. This will eventually replace the Netblazer for dial-up customers. A Lightstream 1010 switch was also present. The Lightstream is being used to build up the backbone. The unit has a plug-in for single- and multi- mode OC3 lines.

Larry: Internet II: Larry attended the Internet II conference on January 22-23. OARnet was one of 15 affiliated groups, comprising about 300 people total. Applications that would use the bandwidth were defined. The technical discussion was interesting to OARnet because OARnet is in a very good geographic location to be an access point to Internet II. Larry called associates in Indiana, Michigan State, Penn State and several others. Looking regionally, OARnet feels it can be a cost effective gigapop for sites as far west as Chicago. This effort involves Educom and also NSF with

its VbNS project. Gene put a slide showing the proposed gigapop links on
the projector. The expected price for a DS-3 under this system would be
$3,000-$4,000 per month. The current Columbus to Chicago charge for a DS-3
is about $20,000 per month, for comparison. Gene replaced that slide with
a detailed view of the OARnet backbone Structure. The biggest change will
be a planned conversion to all ATM switches; DS-3 to all remote points of
presence; link improvements at the KRC computer center. The OEB center in
Columbus is fully AM and all the routers are connected. The SOT location
is currently under upgrade and is planned for completion in about one moth.
Next Cleveland, then Akron, will be upgraded. Finally the loop connecting
Dayton and Cincinnati needs to be finished. It appears that all the
upgrades are financially covered. Direct connections to the Chicago NAP via
MCI are in the process of being worked out. Gene says that something will
definitely have to be done by the beginning of the next school year. MCI
recently made $60 M in capital improvements. Even bigger capacity is still
needed. In the 12 months Dec 96 - 97, traffic grew 9000%. OARnet is being
throttled by MCI in terms of capacity. Three of the DS-3s are in the 2/3
full range. Sprint and the other nets are mostly DS-3. MCI is the only
carrier with significant OC-12 penetration. Gene's estimation is that the
current Internet is about six months from melt-down. Internet-II is very,
very much needed. Gene anticipates per-packet charges as capacity maxes
out. When questioned, Gene says that it is planned that ATM will be offered
directly to the institutions; at least one site has requested it. The exact
delivery mechanism has yet to be determined. Some national carriers do have
ATM available. MCI does have it, but it is only available at T1 rates.
Ameritech is planning on putting in a frame-relay based ATM offering - it
would be low speed.

What about ATM to the desk top? That idea has been posed, but isn't very
popular now. Most people anticipate 100baseT because 100baseT will keep the
cost of the workstation NICs low. At some point the applications being
written will drive ATM to the desk top.

What about web caches? The results are very mixed.

What about IETF-sanctioned versus ad-hoc top level domains? There are seven
new IETF endorsed domains.

What about ATM vendor compatibility? There is a PNNI standard. Not many
vendors inter-operate. Cisco, within its own domain, seems to work pretty
well. Pat at Case is going to have to use permanent virtual circuits to get
his Fore boxes to talk to OARnet's Cisco units. OARnet's cut-over to the
ATM to replace the FDDI was done on 4:00 PM on a Thursday afternoon on the

live network carrying 40 megabits. An RSP4 was put into the CIC-net circuit
at 5:00 AM Tuesday morning; something like this is going to have to be done
to replace the Cisco-7000s which are maxing out.

Ruth: Somacs. OARnet is fully up to date on its circuits. Ameritech is
still on order on about one dozen circuits. They are currently running very
close to the 60 day time frame. NASA Lewis is behind due to a DAS problem;
it is not due to Ameritech. Key concerns now are having end users return
loaner equipment such as 56K and loaner routers.

Re: crummy service from Ameritech... call the Ohio PUC to voice your
concerns.

Moved to adjourn at 3:09 PM. Seconded and passed.

Attendance list:
(Apologies for misspellings. Hint: put your name on the roster using neat,
non-cursive hand writing to assure maximum legibility...)

Name	Representing
Bill Mayhew	NEOUCOM
Greg German	OhioLink
Galen Work	Wilmington
Sean Joyce	Heidelberg
Jay P Blum	TMC
Jim Anderson	Oberlin College
Elliot Jolesch	Oberlin College
Bill Blake	The University of Findlay
Paul Probst	University of Cincinnati
Patrick Limpach	CWRU
John Nolan	CSU
Bob Beer	Ohio Northern Univ.
Neil Ludban (n-ludban@onu.edu)	Ohio Northern
Nemtalah Daher (n.daher@csuohio.edu)	CSU
Laura Mercer	Sinclair College
Dave Johnson (JohnsonII@EDISON.CC.OH.US)	Edison CC
Peter Murray	CWRU
Corine Bishop	OhioLink
Lee Schultz	College of Wooster

Kingsley Meyer   University of Rio Grande
James Thompson   University of Rio Grande
Teresa Beamer   Denison University
Tim Sell   AFIT
Jaime Madden   Shawnee State Univ
Mike Berry   Shawnee State Univ
Bob Stelljes   AFIT
Anita Cook   OhioLink
Eric K. (ERICK@CINSTATE.CC.OH.US)   Cincinnati State
Tim Dewald (DEWALDT@CINSTATE.CC.OH.US)   Cincinnati State