



# Exp News

VOLUME 3, NUMBER 1, January 1996

## Computer Networking!

### Calendar of Events:

January 23	Advancement Tests
January 30	Post Elections
February 3	Court-of-Honor
February 4	Scout Sunday
March 30	Scout Show
January 3-12, 97	10MegaVenture
July 28-Aug5 1997	BSA Jamboree

### Happy Birthday

Joe Harvey 2/11/78

### Norman Rockwell is coming to Columbus Ohio

Scouting

Sixteen original works by Illustrator Norman Rockwell depicting Scouting traditions and values will be on exhibit in Columbus Ohio April 12 1996 at the Columbus Museum of Art.

The Rockwell tour will allow thousands of people to share in the magic of Scouting as seen through the eyes of Norman Rockwell, Boys' Life art director from 1913 to 1916. Chief Scout Executive Jere Ratcliffe says that Rockwells are fundamental to Scouting. "We cannot separate his work from Scouting. There's a common spirit."

### Going to College

Joe Harvey



This month I would like to write about College. I have been accepted to Virginia Poly Tech and Purdue.

I originally started looking for good engineering schools, but decided that Computer Science would be more fun and more rewarding for me. I have to revisit Purdue in January to find out more about their programs, but they should be good.

I was quite impressed with Virginia Poly Tech. They require their Computer Science students to get a computer. The last three years they had students get a DECK ALPHA. This year they required students to get an IBM 300. A student can actually bring and machine, but it has to be able to run the software the school gives them. The DECK Machines ran Deck Unix of course, but the IBM's ran FreeBSD.

The school had many labs with Sun Equipment including a room on parallel computing, which had 3 machines (at least 2 were Suns) linked to a HO model train layout. The point was to run and switch the trains by computer without wrecking them. There was also a nice lab to test the human computer interactions of programs.

I was not actually able to play on the machines like I had hoped because, at the time of my visit Virginia Tech was hosting a programming competition. The strongest point of the program they offer is that it is taught almost entirely in UNIX. One of the only things not taught in UNIX is a short unit on Microsoft Windows. They also have great job placement. They have many companies coming in two to four times a year to hire their students. One thing that impressed me was that Microsoft was hiring people from them that had UNIX background to go and work on the Microsoft products.

Next Month I will talk about Purdue.

### The Explorer Code

As an Explorer-

I believe that American's Strength lies in her trust in God and in the courage and strength of her people

I will, therefore, be faithful in my religious duties and will maintain a personal sense of honor in my own life.

I will treasure my American heritage and will do all I can to preserve and enrich it.

I will recognize the dignity and worth of my fellowmen and will use fair play and goodwill in dealing with them.

I will acquire the exploring attitude that seeks the truth in all things and adventure on the frontiers of our changing world.

## An interview with James D. Corder

Joe Harvey

- 1) What do you like most about your job?

I get to play with some of the worlds largest computer networks. That \$250,000.00 a minute flows through our network. To know that I am helping a MIS department of a fortune 100 mature into a world class organization. To know that my Director, Officer, Vice President, and myself all have the same vision.

But I must admit the one I enjoy the best is the most unseen and the part that I must speak the least about: The continual development and growth of my staff. I can not put into words the joy I have as I watch those around me increase their abilities and inter personal skills.

- 2) What do you not like about your job?

Dealing with people that forgot that PC stands for Personal Computer and somehow believes it stands for workstation or desktop. Dealing with people that thinks Windows 95 is state of the art technology and do not have a clue that it is truly 1979 technology only placed on a box 5 times faster than the architecture it is based on and hasn't changed since the 1980s. Dealing with people that believe that Gigabit is a measurement of Disk

Space and couldn't possibly have a clue that it is a measurement of RAM.

- 3) Is your job steady work every day or does it fluctuate?

Your question can be taken two ways: Job Security vs. Day to Day work flow.

Is my job boring and never changing? Oh no. I truly look forward to going into play every day. Each morning is so halter skellter. I am presented with many new "emergencies" and "top priorities". Each staff members has many reasons why their problem is mission critical and effects the entire enterprise...

What is most fun about this situation is developing the pyridine shift necessary to achieve that "world class" organization. The teaching of my staff how to ask the appropriate questions so they can fulfill their needs. How to set dead lines that are mutually agreeable, and meet them. And most important is their self-acquisition that trust and respect are not associated with a position or even give it is earned.

As for job security: If a true leader is to work him/herself out of a job, then there is no such thing as job security.

- 4) Are there many rewards for your job or is it rather thankless?

I am paid well. Ok, I always want more... However, all of the rewards are inner ones. There are no bonuses, no trips to Hawaii, no window with a view. One must learn that though the pats on the back are good it is truly the inner rewards that are the most powerful.

- 5) If you were starting all over would you chose your job again?

This job with this company, yes. This career? This isn't the career I originally chose. It kind of chose me!

## Java Food Fight

DJ Gregor

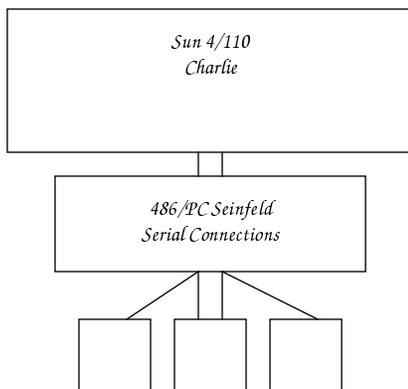
Idea! An Interactive, Multi-User food-fight type game (sound familiar so far?) on the Internet implemented with the powerful Java language! How about if our post does it?

Our post has worked on one project before, a multi-user food-fight game, and we have been talking about the new Java Internet programming language that will become the new standard for the World Wide Web. While I was playing Tic-Tac-Toe in Netscape's Java browser (part of most versions of Netscape beginning with 2.0b3), I thought that we could merge these two together and write a cool interactive game.

Java gives us the ability to write programs that run on many platforms, but also it lets us easily write networked programs that can run over the global Internet.

Object oriented programming has been one of the major influences to Java, and the language is very similar to C++, but simpler, and it has features found in other object oriented languages. With Java we can write some pieces of code, catalog them, and then easily re-use them later to improve on our game, or to be put into a totally separate and different program!

We even have our hardware setup to work with Java. Here is my idea of how to do things, comments are welcome!



- <- Has all user files
- <- Runs HotJava or Netscape
- <- only login is on the console

- <- User files via NFS from Charlie
- <- Users login to Seinfeld to

- <- User Terminals

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## Learn to Create Home Pages

E. Paul Ratazzi

<uunet!rl.af.mil!ratazzi>

I'd be glad to tell ExplorerNet about your home page [ExplorerNet: See URL in original message below]. You also might want to have it added to some of the scouting pages that are around. Two I know of are

<http://www.almaden.ibm.com/scouting/#explorers>  
<http://www.hiwaay.net/usscouts/index.html>

As far as learning Hypertext goes, you will find that

<http://home.netscape.com/home/how-to-create-web-services.html>

is a good place to start. Also, "<http://union.ncsa.uiuc.edu/HyperNews/get/www/html/lang.html>" has many useful links. Other collections of Web developer's resources are "<http://www.bham.ac.uk/documents/production.html>" and "<http://www.w3.org/hypertext/WWW/Tools/Overview.html>". That is probably enough to get you started!;-)

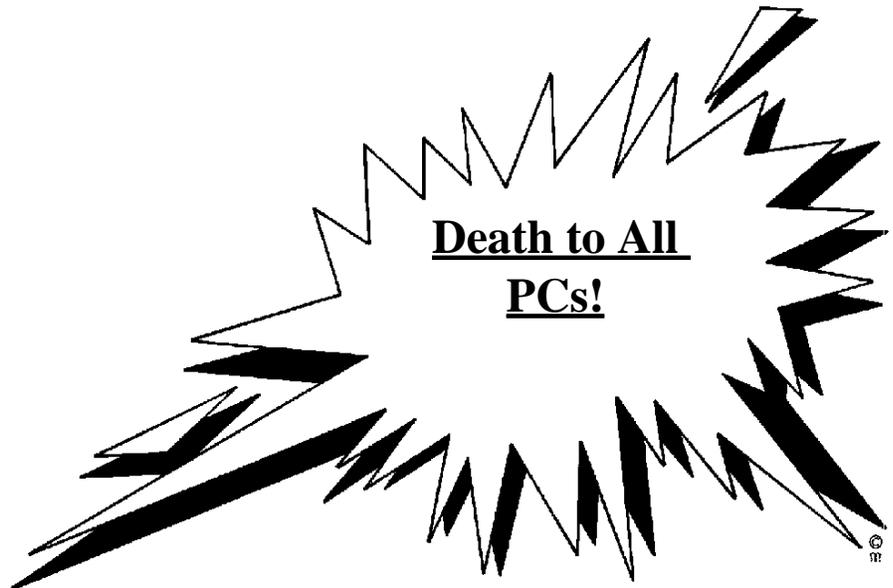
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## The Death of a PC

Karl Matthias

I recently sold the PC which was my long-time main machine in favor of a CompuAdd SPARCstation-2. I was actually able to get ahold of one for less than I sold my PC for. I was quite pleased with the look of the machine, but for a long time all I could do was look at it, because a computer without an OS is pretty useless. I tried installing Solaris 2.5 with the CD-ROM drive from my NeXT, but it didn't work, possibly because of cabling problems. So, I enlisted the kind aid of Mr. Corder and his Sun CD-ROM drive.

I had previously installed several versions of NeXTstep, and was expecting a similar sort of scripted text-only installation, but was pleasantly surprised by how nice the Solaris 2.5 install really is. You boot off the CD, and it actually brings up X and prompts you with dialog



boxes and field entries. I must say that I was quite pleased.

I had never experienced a Sun before in terms of OS installation, so I watched as Mr. Corder entered data and assigned partition sizes. Unlike SunOS 4.1.3 with which I had some little experience previous to this, partitioning was, again, a graphical affair. There was no messing with the format.dat file or the cryptic format command. You simply place the partition information in fields in a window. There are some few other things that you need to assign, like hostname, and IP address, but it is all easily understood. After this is set up, the OS takes over. It formats whatever drives you have assigned it, and then installs the components you checked in another dialog. It really was easy.

After the basic installation was done, Mr. Corder loaded up the machine with GNU, demos, sounds, MOD files, and lots of other goodies. Now I have lots of toys to keep me from doing my homework.

I just thought I would take this opportunity to say that I was very impressed with the installation process for Solaris. With the used workstation market the way it is right now, I would highly suggest to any UNIX lover that they purchase a machine capable of running Solaris 2.5.

So far I have found it easy to use and quite stable. And, unlike some OSes, you can actually install it the first time, without having to retry lots of things to make it work. Congratulations to Sun on the OS!

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## The Indian in the Cupboard

James D. Corder

Last night for some unknown reason I decided to purchase the video The Indian in the Cupboard. I truly enjoyed this flick.

This is a tale of nine-year-old Omri who, when he places toys into a Magic Cupboard, brings the toys to life. What is most intriguing is the depth of Omri's emotions as his real live toys begin to act out the roles that they were designed to portray. Darth Vader Attacks Godzilla...

Omri was not ready for his toys to die. He could not understand when the cowboy shot the indian. Of course this movie had every nuances of The Littles Afoot! i.e.: The rat chasing the 3" man through the floor boards.

The blue screen was great. One never saw the lines. But of course this movie was destined to fail since it was necessary for the audience to think.

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### Quote of the Month

James D. Corder

No one can go back and make a brand new start, my friend, but anyone can start from here and make a brand new end.

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### St. Stephenson's Food Drive

James D. Corder

Explorer Post 369 had a good turn out for the Saint Stephenson's food drive.

We sorted and bagged over 5,000 grocery bags of can goods, tons of potatoes, and a semi truck load of bread.

We sorted and bagged toys for over 3,000 families. All in all an great service project.

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### Our Principals:

- 1) Honor before all else.
- 2) The difference between a winner and a loser is that the winner tried one more time.
- 3) K.I.S.M.I.F.

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### Our Creed:

*Exploring: Enthusiasm, Energy, & Excellence.*

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### Post Finances

Explorer Post 369 has **-\$305.00.**

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### Up-an-Coming Post Expenses

12/01/96 Post Charter \$30.00  
12/01/96 Post Insurance \$85.00

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### Up-an-Coming Member Expenses

Registration 11/01/96 \$15.00

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### Explorer Post 369:

Explorer Post 369 was chartered on December 31, 1994 to the Reformation Luthern Church.

Explorer Post 369 specializes in UNIX for Programmers while emphasizing a deep theme of Engineering Computer Information & Science

Membership in Explorer Post 369 is open to young men and women between the ages of 14 [and in high school] and not yet 20. Annual Membership fees are \$15.00.

*The views in this NewsLetter are strictly those of Explorer Post 369 and they do not necessarily represents the views or opinions of the Reformation Luthern Church or the Boy Scouts of America and/or the Simon Kenton Council.*

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### Our E-Mail Addresses

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Steve Weller	Committee Member

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Chris Gauger	Toady
Matt Groce	Toady
Allan Hamilton	Toady

Remember to add [.columbus.oh.us] to the end of the freenet accounts!!!



**BOY SCOUTS OF AMERICA**

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## Computer Networks

James D. Corder

I would like to begin in stating that FDDI and Token Ring are so close to one another that in operational concepts that I place them together on the networking rung of evolution, close to the bottom. Though ATM offers fantastic bandwidth and networking concepts it has yet to create a standard amongst vendors. Therefore, it merits serious study. However, it would be impractical to base a companies future endeavors on it.

In my opinion, 100Mb EtherNet will become the standard for Computer Networking. Almost all of the 100MB cards that I have seen auto switch between 10Mb and 100Mb. Therefore, it is compatible with ones current network. Moreover, if you didn't cut cost by cutting on wiring standards you can use your current copper in the wall. There again, if you did try to impress some accounting VP by saving a few pennies a foot or you listened to a vendor trying to beat out the competition, then you deserve the dilemma you are in. But we will save Management by Magazine and Incompetent Technical Managers trusting the salesperson over their own Technical Staff for another article.

Based upon the above opinions, to focus on the topic at hand, we will narrow this article down to FDDI-TokenRing and EtherNet-TCP/IP. First an overview of their operational concepts:

### TCP/IP

To simplify the concept: Assume that you are standing in a multi room convention center. No one in the rooms have the same name. You yell out "STELLA." Now, since there can only be one Stella, she replies. However, if you where in the largest of rooms with hundreds of people, and the room is so noise that when you yell out Stella, she could not hear you. This collision of noise causes you to yell again, and again until you error out and give up. However, if Stella was in another room and someone knew her location, let us say by a map of some



## *Looking at your computer network.*

kind, then they could route your message to the other room. Like in any conference, if you make the room bigger by adding more people the chance of collisions increases. Therefore, it becomes necessary to segment the convention into more private areas.

The benefit to TCP/IP is that anyone can talk to anyone at any time. Mapping is simple, and it is cheap.

The drawbacks: The larger the network the greater the chance of collisions and errors. Therefore, it becomes necessary to segment the network into smaller chunks. However, incompetent system administrators tend to do this by number of computers [trying to make the number of systems equal per segment] rather than by usage and need.

### FDDI/TokenRing

Again, to simplify the concept: Imagine a round Train Track. There can only be one train on the track at any one time. You can put a bigger engine on the train track so you can make it faster. However, you can not add a second train. Now let us assume that the train can only go Clock Wise and it can only carry one passenger at a time. Now you might have the fastest bullet train in the world, but you can still only carry one passenger at a time.

The concept is simple, by allowing only one passenger and one train on the track at a time you eliminate collisions and confusion. However, the latency generated by waiting to get on the train increases exponentially as more passengers join a que at any or all of the train stations. The more number of train stations "computers" added to the track, the longer it takes the train to make the loop back to the beginning point and pick up the next passenger. The draw back is a network managed by unqualified staff members who can not see the underling problems. They will simply quote that they have efficient bandwidth.

I have found that the companies that I have worked for/with tend to do cost analysis on everything from copiers to people. Can we get the product for less. Therefore, they purchase cheaper people thereby getting lesser quality System Administrators.

You can tell a lesser qualified System Administrator by their conversations: If they can only quote Band Width and never bring in NFS/NIS tuning or latency, or router hops... Then it is time to send them to school or to purchase a new one, or both.



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## ISDN - An Introduction

DJ Gregor

Ameritech has only had ISDN fully deployed in Columbus for less than one year. However, within this one year there has been an explosion in the number of end-users that have jumped on the medium-speed, wide-area networking bandwagon. ISDN lines are priced competitively to analog plain-old telephone system (POTS) lines. The only hurdle is the higher price of ISDN terminal adapters, which start out at 300 dollars.

An end-user usually gets an ISDN BRI (Basic Rate interface) line. This line is brought into the residence or business over a twisted pair cable, the same that is used by analog POTS. This single twisted pair contains three channels. Two of these are 64kbps B (Bearer) channels that carry the actual data. The other channel, a 16kbps D (Delta) channel, is used to communicate with the telephone switch, which is called "signalling". For residential use, the price to get an ISDN BRI "loop" to your home is around thirty-three dollars a month. Residential ISDN is billed on a per-call basis, and there are a number of calling plans available from per-call rates (of eight cents) to unlimited-call rates.

The next step up in ISDN, which is usually used by larger companies and Inter-

net providers, is Primary Rate Interface or PRI. In North America this is a T1 line, and it carries twenty-four 64kbps channels. One of the channels (only on the first PRI line if there is more than one) is used for carrying signalling information, and the others are for user data. PRI is an inexpensive way to bring medium-bandwidth connections into a central site as it costs about \$20 a month per channel. There is also a much higher bandwidth version of ISDN called B-ISDN/ATM, which uses Asynchronous Transfer Mode at up to 155Mbps.

ISDN is an acronym standing for Integrated Services Digital Network. Integrated Services allows it to handle a variety of services that would previously be transported over separate communication lines. ISDN can carry data, voice, and video over the same line. It also does this digitally, with the phone company guaranteeing an almost perfect, error-free connection. There is also a very small call-completion time compared to that of analog modems--it takes about two seconds to complete an ISDN call!

ISDN is not the fastest of networking choices, it is slow compared to ATM, Frame Relay, or SONET. However, it's cheap, and it brings medium speed bandwidth digitally to the consumer. Stick around, because next month I will be giving some examples of how ISDN can be used in the enterprise.

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## Documentation

Joe Harvey

This month I would like to write about Documentation. At first Documentation seems unimportant. Actually it is very important. I am a Senior so after the end of this year I will not be able to administer my lab anymore. The other people that I worked with did little or no documentation of their work. I have written down all the stuff I did to the network. I have now to teach Phil how to administer our network. I only have a semester to teach him in. I can teach him the basics, but he is going to be like me for the rest. He will have to poke around to find it out. Because I documented all my work he can look up solutions to problems that he encounters or see why something is set up the way it is after I am gone. By documenting and making myself replaceable by anybody, I have in a sense made myself unreplaceable. Documentation is important in Administration for the health and future of a Network.

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## Security/ID Cards

James D. Corder

I have never understood the need for employee ID cards. Face it, they are not worth the cost of making since most security departments do not enforce their usage.

For the past week I have not carried my security ID badge. I still have had full access to every room and floor in the building except the employee cafeteria. I have no problem entering the computer center. They only place that the IDs are checked are when you enter the cafeteria.

Moreover, I never understood why they placed our picture and the company logo on the cards. Now if they are lost the thief knows where to use the card.

I will try to write an article next month on why "SmartCards" and Proximity Cards must die!!!



John Smith  
123-45-6789

*If lost or stolen  
please return to:  
We own your Sole Inc.*

