

==Phrack Inc.==

Volume One, Issue Six, Phile 1 of 13

Introduction

Welcome to Phrack Inc. VI! We have been somewhat delayed in our release due to problems with my home life (see PWN in this issue for details) but here we go! Right now, Metal Shop Private is down, but when I return to real life, it should re-emerge with a new BBS program and hopefully will be better than ever. Now, with the release of Telecomputist Newsletter, we have the capabilities to have Phrack Inc. printed out.

If you feel you'd like to subscribe to something like this, it would be operated in this manner: being one of our positive points, it will be free to an extent. You, the subscriber, will be paying for postage and if necessary, envelopes as well as P.O. Box rental, but none of this should amount to much. If you are interested in getting this, please contact any member of the Metal Shop Family or Phantom Phreaker of The Alliance with your opinions on this. If we get enough support, we'll get this rolling. Later on.

TARAN KING

Sysop of Metal Shop Private

This issue of Phrack Inc. includes the following philes:

Title by Author (amount in K)

- 1 Index by Taran King (1k)
- 2 Pro-Phile on Groups by Knight Lightning (14k)
- 3 The Technical Revolution by Dr. Crash (4k)
- 4 Fun with Lighters by The Leftist (2k)
- 5 Nasty Unix Tricks by Shooting Shark (4k)
- 6 Smoke Bombs by Alpine Kracker (2k)
- 7 Cellular Telephones by High Evolutionary (5k)
- 8 Wide Area Networks by Jester Sluggo (10k)
- 9-13 Phrack World News by Knight Lightning (16,15,15,16,15K)

IBM Syndicate: This group was formed around April 6, 1986. Its charter members included; Dark Creaper (916), Brew Associates (215), Major Havoc (301), and one other whose handle remains unknown to me at the current time. They were a new phreak/hack/pirate group. Unfortunately, this group (like so many others) died within its first month.

Icub (International Computer Underground Bandits):

This is a hack/phreak group who's main emphasis is on phreaking. It is based in Memphis, Tennessee. It has 10 members in it, and the only semi-active member left is Doc Holiday. Not much else is really known about this group except that it is inactive and there have not been any announced plans to revive it.

LOD/H: Legion Of Doom/Hackers

These two groups are very closely intertwined. They both were formed on Plovernet. The founding member was Lex Luthor. Through the years, there have been LOD/H bulletin boards such as Blottoland, LOD, FOD, etc. Today there is Catch 22 and a new LOD bbs, supposedly being run by King Blotto. The current member list of the group is as follows:

Legion Of Hackers

Blue Archer
Gary Seven
Kerrang Khan
Lex Luthor
Master Of Impact
Silver Spy (Sysop of Catch 22)
The Marauder
The Videosmith

Legion Of Doom

Phucked Agent 04
Compu-Phreak

LOD/H is known for being one of the oldest and most knowledgeable of all groups. In the past they have written many extensive g-philes about various topics. (Please forgive any mistakes in the member list since this list was provided by Lex Luthor approximately 1 1/2 - 2 months ago).

Metal Communications: A very large group that has written many files throughout its existence. Some of the boards in its menagerie include Speed Demon Elite, Metal AE, Metal Works AE, Metalland I and several others. The membership of Metal Communications includes:

Cobalt 60/Crimson Pirate/Dr. Local/Red Pirate/Shadow Lord/The Angel Of Destiny
The Apothecary/The Byte/The Byte Byter/The Dark Wizard/The Duke/The Dutchman
The Man In Black/The Prophet/The Pink Panther/The Voice Over/The Radical Rocker
The Warlock Lord/White Knight

Red Pirate, Crimson Pirate, and Dr. Local are the group's main ware distributors.

A subsidiary of Metal Communications is the Neon Knights whose membership includes:

Baby Demon/Jolly*Roger/The Blade aka Killer Kurt/The Master of Reality
The Metallian/The Outland/Zandar Zan

PAG/PAP: Phreaks Against Geeks/Phreaks Against Phreaks Against Geeks

PAG: This group was formed by TWCB Inc. as a joke on a conference in December, 1985. The charter members were TWCB, Inc. taRfruS, Blue Adept, The Clashmaster and a few others. Later, Catcher in the Rye and the Slovak wanted to join.

PAP: In resistance to PAG, Boston Stangler and Micro Man formed PAP. Several others sided with them but were never formal members.

All of this nonsense was really started on the Dartmouth system and was mainly a feud between phreaks in the Boston (617) area until TWCB got involved.

The Administration: This group was sort of in two parts; The Administration and Team Hackers '86. The membership of these groups include:

Adolph Hitler.....Team Hackers '86

Alpha Centauri
Author Unknown.....Team Hackers '86
British Bloke.....Team Hackers '86
Dark Priest
David Lightman (214).....Administration Leader/
Team Hackers '86

Dr. Pepper
Hewlett Hackard
Major Havock.....Team Hackers '86
Mane Phrame
Mark Twain
Phoneline Phantom 1 - *Not* a member of Phoneline Phantoms.
Red Baron
Renegade Rebel
Sasha Kinski.....Team Hackers '86
The President
Walter Mitty

The group did disband temporarily for reasons dealing with security, but now is back together. For other news about this group see the current PWN.

The Nihilist Order: This group was really a loosely connected bunch of friends and phreaks and not a true club. It is based in Fremont and Sunnyvale, California. It was started by TRASk and The Highwayman. The membership includes:

BelGarion/Ogre Ogre/The Animator/The Highwayman/TRASk

All of the members of the group have been busted or been involved in busts in the past few months. The Highwayman bit it in the Phoenix Phortress Sting Operation, and the others all got caught on a carding scam. Although BelGarion was later released with no record.

One of the boards in the Nihilist Order's network is the Shattered World Elite, which is sysoped by TRASk. The group is currently inactive.

The P.H.I.R.M.: A somewhat new group that recently has been accused (without proof) of being fed invested.

Not much is really known about this group as they would disclose very little information. Some of the boards that are now P.H.I.R.M operated include Thieve's Underworld, sysoped by Jack The Ripper, World's Grave Elite sysoped by Sir Gamelord, and SATCOM IV.

The P.H.I.R.M. reportedly will be releasing a newsletter.

The membership of the P.H.I.R.M. supposedly includes:

Archangel	Blade Runner
Jack The Ripper	Sir Gamelord
The Stingray	

It is rumored that Blade Runner is the same person as Archangel and/or The Stingray.

TPM (The Punk Mafia): This group when last checked had eight members. The following is a complete listing.

Arthur Dent	Creative Chaos
Erik Bloodaxe	Gin Fizz
Ninja NYC	Peter Gunn
Rudolph Smith (703)	The Godfather (703)

The group will be going through a rebirth this summer. Their main goals include burglary, fraud, hacking, and phreaking. Most recently The Godfather retired and Ninja NYC came very close to being busted. See Phrack World News Issue V.

The Racketeers: The new Apple pirating group was assembled by Apple Rebel. The

membership now includes:

Apple Rebel/Crustaceo Mutoid/Hot Rod/The Micron/The Warezird

Tribunal Of Knowledge: This group was formed very recently by Blue Buccaneer and High Evolutionary with one purpose in mind: to get together to trade knowledge and information and to discuss this information until all the members had a good working knowledge of it. The final result would be g-photos written by the group about the topic. On the whole it was a good idea.

The complete membership includes:

Blue Buccaneer	Chef Boy R Dee
Cyclone II	High Evolutionary
Night Stalker	Paradox
Professor Pixel	Slave Driver
The Inspectre	The Seker
The Wild Phreak	

2300 Club: Based in Cleveland, Ohio. The 2300 Club is now being compared and treated as miniature mafia by local authorities. This is mainly for crimes including the blowing up of cars. Two of the members were caught for fraudulent use of a credit card and one has been arrested for car theft. Which of the members that refers to, I don't know, but the membership of the 2300 Club included:

Dr. Gorey	Dr. No
Eagle Eyes	Judge Dredd
King Blotto	Mr. Modem
Prince Squid	Spectreman
The Formatter	

2600 Club/New 2600 Club: Both groups are no longer in existence. Originally started as a local group of friends in St. Louis, Missouri, it gained members quickly, too quickly, and as the membership grew, the unity and productivity of the group lessened until the group(s) finally broke up. However many of the members of 2600 Club now write (or have in the past) for Phrack Inc. Among them are:

Cheap Shades/Data Line/Dr. Crash/Forest Ranger/Gin Fizz/Jester Sluggo
Knight Lightning/Monty Python/Phantom Phreaker/Taran King/The Clashmaster

2600 Club had no relation to 2600 Magazine.

Warelords: There are 13 members in the Warelords and they are based in California, Maryland, Tennessee, Washington D.C., and Wyoming. Billibuster, a member of the group, said that the Warelords are a phreaking and carding group that also writes programs and sells them. He claims that they are not pirates. The group isn't very active.

Other groups:

Catholics Anonymous: A pirate group
Elite Phreakers and Hackers Club: From World of Cryton
Feds R Us: Joke by King Blotto
High Mountain Hackers
Imperial Warlords: See Five-O
Inner Circle: The Cracker (Author of "Out of The Inner Circle")
Kaos Inc.
Knights of Shadow: Sir Knight
MPG: Midwestern Pirates Guild
NASA Elite: Captain Kid
Neon Knights: See Metal Communications
Phlash: A relatively new Amiga cracking group.
Phoneline Phantoms: The Colonel, The Duke, The Executioner, and The Sprinter.

Phreak Hack Delinquents: Metro Man and the Reaper (212)

Project Genesis: Sigmund Fraud

RDTF: Red Dawn Text-Files, Saltheart Foamfollower (SE) and Brain Gadget (Ca.)

Shadow Brotherhood

65C02 Elite (612): Wizard of ARPAnet and The Count. BBSes: Irongate, North Pole, The Guild, and The Graveyard.

The Dange Gang: Maxwell's Demon

Triple Entente

2601 Club: Formed by taRfrus to combat 2600 Club.

1200 Club

Ware Brigade

[illegible]

Hacking must continue. We must train newcomers to the art of hacking. We

As I stated above, this is only on the motives. If you need a tutorial on how to perform any of the above stated methods, please read a file on it. And whatever you do, continue the fight. Whether you know it or not, if you are a hacker, you are a revolutionary. Don't worry, you're on the right side.

[illegible]

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Unix Nasties

By Shooting Shark

Written on April 3, 1986
=====

Summary: Methods of sabotaging your favorite Unix system.

Preface: I do not advocate utilizing ANY of the methods I put forth in this file. Unix is a cool operating system, perhaps one of the best systems ever designed in many respects. If you have access to a Unix system, you should LEARN UNIX AND LEARN C, because that is where the money is in the computer world. However, Unix is a relatively insecure operating system which is easy to fuck up. This file explains a few ways of doing so.

Crash The System

Unix has no built-in provision for the maximum amount of disk space allowed per user. Thus, one user can grab all the disk space on the system and effectively prevent anyone else from writing to the disk. A simple way of grabbing all the disk space is to create subdirectory after subdirectory until it is no longer possible. Here are a few ways of doing it.

1> Create a file with the following lines:

```
mkdir subdir
cd subdir
source /u1/mydir/crash
```

Call it crash. The last line ("source /u1/mydir/crash") should be altered so that it will look for the file in your directory. If your directory is /u3/students/jeff, the last line should say "source /u3/students/jeff/crash". After you write the above file, type:

```
% source crash
```

and wait...within a few minutes the program will abort because it won't have any more room on the disk. Neither will anyone else.

2> Here's a more elegant way of doing the same thing. Create this "endless loop" shellsript:

```
while : ; do
mkdir subdir
cd subdir
done
```

and then "source" the file. If you are in the "sh" shell (if you are, you will probably have a "\$" prompt) you can type "while : ; do" from the \$ prompt. You will then get a > prompt. Type the next three lines and sit back.

3> If you'd like to set the process in motion and hang up, and the file is called crash, type:

```
% nohup source crash &
```

and log off. This will start it as a background process, allowing you to log off. However, log off QUICKLY, since if you used the first example for your crash file, it will also eat up background processes like crazy which will also fuck up the system to some extent. Which brings us to...

Slow Down The System Immensely

There are many ways of doing this, the method being creating a sufficiently large number of background processes. Here's one specific example. Create a file called "slow1" with the following lines:

```
w &
source slow1
```

create a file called "slow2" with:

```
source slow1 &
source slow2
```

and execute slow2 with

```
% slow2
or
% slow2 &
```

This will create 25 background processes, each one running 25 background processes. The system will hardly move after you've got each one running.

Messing Up A Directory

Many file-handling commands use "-" options. Create a file with a "-" at the beginning of its name by doing this:

```
cat > -filename
```

[now type a few lines, maybe something rude like "ha ha you can't delete this file".] Type a ^D (control-d) to end input. You now have a file called -filename in your directory. It will be VERY difficult to remove this file. If you were to try rm (remove) -filename or mv (rename) -filename, the rm or mv program would interpret -filename as an option, not a file, and would give you an error message telling you that -filename was not a valid option...thus, the file stays there obnoxiously.

Create a couple of hundred files with "-" as the first characters in their names...it will be a royal pain for the person who is blessed with these new files, and they will probably just have to get a new login.

Conclusion

The use of any of these techniques is quite irresponsible, and if anyone did this to my Unix system, I'd be quite pissed. That is why I strongly recommend that you never use these tricks.

So Long,
Shooting Shark

"Some people have a bad attitude, and I say, if they want to act tough, beat 'em up!" - Blue Oyster Cult

For more information on UNIX sabotage and cracking, see the following articles:

Ritchie, Dennis M. [he wrote Unix] "On the Security of UNIX." Programmers Manual for UNIX System III Volume II. Supplementary Documents.

Filipski, Alan and Hanko, James. "Making UNIX Secure." BYTE Magazine, April 1986, pp 113-128.

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```

      *
      /
 /-----\
< Smoke Bomb >
 >-----<
<      by      >
 >  Alpine  <
<      Kracker >
 \-----/

```

Ingredients-

Saltpetre (Potassium Nitrate)
Sugar
Alcohol (100% is best, but plain rubbing alcohol will work)
Gunpowder (or some ground-up rocket engines)
Matches (Get a box of 50 packs -they can be very useful.)
Coffee can
Cigarette

Instructions:

Combine the sugar and saltpetre in a 3:1 ratio (Sugar:saltpetre) and heat over a low flame until the mixture has thoroughly melted together. (It will look like sticky white lumps when ready) You need to stir this continually while heating, and remove it from the flame at the very first sign of smoke. I had a batch go off in my face once, and the workroom was filled with smoke for a good half hour. It is easier and safer to work with smaller batches.

Now, dump all of this "smoke powder" into a coffee can, add some match heads, moisten it with a little alcohol, and add gunpowder until all the smoke powder is coated. Now tape a cigarette between the match heads in an unopened book. Imbed the book into the mixture.

Light the but, and walk casually away to find a nice alibi within 5 minutes.

Notes:

You should be able to find some Saltpeter in a local drug store.

All of the gunpowder, match heads, and alcohol is simply to insure good ignition. You can omit them, but if you have them, mix them in for reliability's sake. For the fuse, you can either use the one listed, or either some canon fuse, or a rocket igniter and an electrical system.

A quarter pound of this stuff is supposed to fill a city block. I'm not sure if that is accurate, but it sure fills a public bathroom nicely.

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Cellular Telephones
[Written By The High Evolutionary]
=====

I assume that most of us know many of the technical aspects of Cellular Phreaking therefore this file is intended for general information as to how these unique devices operate.

Cellular is likely to be successful because it provides dramatic improvements over the historic automobile phones. For years, mobile radio-telephone service was an extremely limited proposition. There were only forty-four radio channels available, and a maximum of about thirty were assigned to any one area. That meant if all thirty channels were occupied-one conversation per channel-and you were the thirty-first mobile phone user who wished to make a call, you would have to wait thirty minutes or more, even in a city the size of New York. As you can imagine, mobile radio-telephone service like that could not become very popular. Even with the limited number of channels, long delays in making calls during busy periods, and often poor quality transmission, there were big waiting lists for mobile service. But with a fully equipped cellular radio-telephone system, it is possible to make 5000 times as many calls simultaneously in the same metropolitan area, opening up the service to anyone that can pay the hefty prices.

That is because cellular radio-telephones systems are technically quite different from traditional mobile telephones. First, the FCC (Federal Communications Commission) has allocated far more channels to cellular, 666 in all. Second, those 666 channels are broadcast from many different locations. In the old mobile telephone systems, there was one powerful radio station with a large antenna that served an entire city. In the new system, a geographical area is honeycombed with many cells, hence the name 'Cellular'. Each cell has its own low-powered radio transmitter and receiver. As a car with a cellular telephone or a person carrying a portable moves from one cell to the next, the call is transferred automatically. You're unlikely to notice when this transfer takes place, even though your phone is suddenly switched to a different radio station and to another channel while you are talking.

Because the cellular signal is low-powered, it doesn't go very far. This permits the same channel you are talking on to be used for calls in other parts of the same metropolitan area without interference. This would mean cellular radio-telephone systems can serve a very large number of customers in an area because there are more channels than before-and the larger number of channels are reused.

Unlike local telephone service, which is provided by a monopoly, there is competition in cellular. Two classes of companies are allowed to offer cellular telephone service in every market. One cellular system can be owned by a telephone company, the other by someone else. The two-company rule was adopted by the FCC so that AT&T, which developed cellular, could not monopolize the whole thing.

Cellular Telephones come in two basic versions, as car phones and portable phones, with a briefcase hybrid. Car phones are by far the most common, because they are much cheaper. But most believe that, ultimately, portables will be the most popular. Washington Post Company president Richard Simmons, whose company is a partner in several cellular systems, even predicts that by the early 1990's "There will be phones roughly the size of a calculators that you carry around in your pocket. They will cost no more than five hundred dollars. They will emancipate people from the necessity of locating a phone to make calls. The bad news is, you will never be able to get away from the phone, and we'll call it progress."

Car telephones include a small transmitter-receiver unit that is usually mounted in the trunk, an antenna and a control head that includes the handset. In most cellular systems, the telephone touchpad is located on the handset. Many domestic and foreign manufacturers make cellular car phones, but so far only Motorola makes portables, the DYNA T-A-C 8000X and 8000S. Motorola's portables look like a slightly enlarged, somewhat chunky telephone handset, with a stubby antenna at one end.

Portables are less powerful than car units, so they can't be used with some cellular systems. The portable's other limitation is battery life. A portable can listen for calls for about eight hours, but it can only transmit for only thirty minutes. After that time it must be charged for a minimum of an hour.

The following American cities have cellular telephone service or soon will get it:

New York	Denver
Los Angeles	Seattle
Chicago	Milwaukee
Philadelphia	Tampa
Detroit	Cincinnati
Boston	Kansas City
San Francisco	Buffalo
Washington	Phoenix
Dallas	San Jose
Houston	Indianapolis
St. Louis	New Orleans
Miami	Portland
Pittsburgh	Cleveland
San Diego	Atlanta
Baltimore	Minneapolis

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Jester Sluggo presents
an insight on
Wide-Area Networks
Part 2

!!

Part 1 contains information on ARPANET and CSNET.
Part 2 contains information on BITNET, MFENET, UUCP and USENET.
It is best if you read both files to better understand each other.

These files will cover general information on wide-area networks, (I.E. ARPANET, CSNET, BITNET, MFENET, UUCP and USENET), but may contain information in relationship with other networks not emphasized in these files. These files are NOT a hacker's tutorial/guide on these systems.

BITNET ~~~~~

BITNET. In 1981, City University of New York (CUNY) surveyed universities on the East Coast of the U.S. and Canada, inquiring whether there was interest in creating and easy-to-use, economical network for interuniversity communication between scholars. The response was positive. Many shared the CUNY belief in the importance of computer-assisted communication between scholars. The first link of the new network, called BITNET, was established between CUNY and Yale University in May 1981.

The network technology chosen for BITNET was determined by the availability of the RSCS software on the IBM computers at the initial sites. [The name BITNET stands for Because It's Time NETwork.] The RSCS software is simple but effective, and most IBM VM-CMS computer systems have it installed for local communications, supporting file transfer and remote job entry services. The standard BITNET links are leased telephone lines running at 9600 bps. Although all the initial nodes were IBM machines in university computer centers, the network is in no way restricted to such systems. Any computer with an RSCS emulator can be connected to BITNET. Emulators are available for DEC VAX-VMS systems, VAX-UNIX systems, and for Control Data Corp. Cyber systems and others. Today, more than one-third of the computers on BITNET are non-IBM systems.

BITNET is a store-and-forward network with files and messages sent from computer to computer across the network. It provides electronic mail, remote job entry, and file transfer services, and supports and interactive message facility and a limited remote logon facility. Most BITNET sites use the same electronic mail procedures and standards as the ARPANET, and as a result of the installation of electronic mail gateway systems at the University of California at Berkley and at the University of Wisconsin-Madison, most BITNET users can communicate electronically with users on CSNET and the ARPANET.

BITNET has expanded extremely rapidly -- a clear indication that is providing service that people need and want. The simplicity of the connection to the network -- acquiring a 9600-bps leased line to the nearest neighboring computer node and in installing an additional line interface and modem -- provides the service at the right price. By the end of 1985 the number of computers connected was expected to exceed 600, at more than 175 institutions of higher education throughout the U.S. BITNET is open without restriction to any college or university. It is not limited to specific academic disciplines, and may be used for any academic purpose. However, use for commercial purposes is prohibited. In special cases, connection of commercial organizations may be sponsored by universities. A particular case is the connection of Boeing Computer Services to BITNET, as part of the NSFnet initiative, to provide remote job entry services to their Cray X-MP/24 to NSF supercomputer grantees who have access to BITNET.

Until recently BITNET had no central management structure, and was coordinated by an executive board consisting of members from the major institutions participating. This worked because most of the computers connected were managed and operated by professional service organizations in university computer centers. However, the growth in the network made it

possible to continue in this ad hoc fashion, and a central support organization was established with support from an IBM grant. The central support organization, called the BITNET network support center (BITNSC), has two parts: A user services organization, the network information center (BITNSC), which provides user support, a name server and a variety of databases, and the development and operations center (BITDOC) to develop and operate the network. A major question facing the members of BITNET is how the funding of this central organization will be continued when the IBM grant expires in 1987.

BITNET, with support from the NSFnet Program, is now examining ways to provide ARPANET-like services to existing BITNET sites. The project, which is similar to the CSNET CYPRESS project, will explore a strategy to provide an optional path to the use of the TCP-IP procedures on existing 9.6-kbps leased lines. The possibility of upgrading these lines to multiple alternate links, providing higher reliability and availability, or to higher speed 56-kbps links is also being studied. The project will offer a higher level of service to BITNET sites choosing this path and also enable a low-cost connection to NSFnet.

MFENET

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MFENET. The DOE's magnetic fusion energy research network was established in the mid-1970's to support access to the MFE Cray 1 supercomputer at the Lawrence Livermore National Laboratory. The network uses 56-kbs satellite links, and is designed to provide terminal access to the Cray time-sharing system (CTSS), also developed at the Lawrence Livermore Laboratory. The network currently supports access to Cray 1, Cray X-MP/2, Cray 2, and Cyber 205 supercomputers. The network uses special-purpose networking software developed at Livermore, and, in addition to terminal access, provides file transfer, remote output queuing, and electronic mail, and includes some specialized application procedures supporting interactive graphics terminals and local personal computer (PC)-based editing. Access to the network is in general restricted to DOE-funded researchers. Recently the network has been expanded to include the DOE-funded supercomputer at Florida State University. MFENET is funded by DOE and managed by Livermore.

MFENET has been successful in supporting DOE supercomputer users. However, the specialized nature of the communications protocols is now creating difficulties for researchers who need advanced graphics workstations that use the UNIX BSD 4.2 operating system and the TCP-IP protocols on LAN's. For these and other reasons, DOE is examining how best to migrate MFENET to the TCP-IP, and later to the OSI, protocols.

The combination of the CTSS operating system and the MFENET protocols creates an effective interactive computing environment for researchers using Cray supercomputers. For this reason, two of the new NSF national supercomputer centers -- San Diego (SDSC) and Illinois -- have chosen the CTSS operating system. In SDSC's case, the MFENET protocols have also been chosen to support the SDSC Consortium network. In Illinois case, a project to implement the TCP-IP protocols for the CTSS operating system has been funded by the NSFnet program, and these developments will be shared with SDSC (and with DOE) to provide a migration path for the SDSC Consortium network.

#### UUCP and USENET

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UUCP and USENET. The UUCP network was started in the 1970's to provide electronic mail and file transfer between UNIX systems. The network is a host-based store-and-forward network using dialup telephone circuits and operates by having each member site dialup the next UUCP host computer and send and receive files and electronic mail messages. The network uses addresses based on the physical path established by this sequence of dialups connections. UUCP is open to any UNIX system which chooses to participate. There are "informal" electronic mail gateways between UUCP and ARPANET, BITNET, or CSNET, so that users of any of these networks can exchange electronic mail.

USENET is a UNIX news facility based on the UUCP network that provides a news bulletin board service. Neither UUCP nor USENET has a central management; volunteers maintain and distribute the routing tables for the network. Each member site pays its own costs and agrees to carry traffic. Despite this reliance on mutual cooperation and anarchic management style, the network operates and provides a useful, if somewhat unreliable, and low-cost service to its members. Over the years the network has grown into a world-wide network with thousands of computers participating.

OTHERS
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Other Wide-Area Networks. Of necessity this file of wide-area networks has been incomplete: Other networks of interest include the Space Plasma Analysis Network (SPAN) -- a network of DEC VAX computers using 9.6-kbps links and the DECNET protocols for National Aeronautics and Space Administration's researchers; the planned Numerical and Atmospheric Sciences (NAS) network centered at Ames Research Center -- a network that is expected to use existing and planned NASA communications links and the TCP-IP protocols; and the planned high-energy physics network -- a network based largely on VAX computers and using the standard X.25 network level protocols plus the so called "coloured books" protocols developed in the United Kingdom. Also, many high-energy physicists, at the Stanford Linear Accelerator, at the Lawrence Berkley Laboratory, and at Fermi Laboratory, among others, have used DECNET to connect their DEC VAX computers together.

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/ luggo !!

Please give full credit for references to the following:

Dennis M. Jennings, Lawrence H. Landweber, Ira H. Fuchs, David J. Faber, and W. Richards Adrion.

Any questions, comments or Sluggestions can be emailed to me at Metal Shop, or sent via snailmail to the following address until 12-31-1986:

J. Sluggo  
P.O. Box 93  
East Grand Forks, MN 56721

~~~~~

Knight Lightning

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May 10, 1986

Taran King is generally thought to be a very mellow, easy going person. For the most part this is true. However he also gets into major fights with his dad. When Taran does get pissed he, gets violent. In the past he has punched a hole into his bedroom door and put dents in his refrigerator with his fists.

Most recently his dad found out about his collection of illegal knives, including stilettos, butterflies, and survival knives. They got into an argument about this and eventually into a fight. Taran stormed off to his room. Meanwhile, unknown to him, his dad called the police. They took him to a nearby hospital's adolescent psychiatric ward, supposedly for evaluation. As of June 14, 1986 he has been there for five weeks and the end isn't in sight.

For a while he had no phone or visitor privileges and there was no way of contacting him. This now has changed, but the problems have not been solved.

On May 23, 1986 he was let out on a pass to go see Judas Priest in concert (it was great). He has been let out on pass several times since then as well, mostly on weekends.

As far as Metal Shop Private...

Well on May 12, 1986, the /\impha and I decided to go to Taran's house to collect the Phrack files and to add a few new modifications to the bbs so that I could control it better remotely. Taran's sister let us in, no problem. Unfortunately, before we were done Taran's dad came home. He immediately spotted my car outside and burst into the house. He was pissed that we were there and made sure we weren't stealing anything (like I am really going to steal from my best friend right?). He assumed that the bbs had crashed and that we were there fixing it. He then decided that he didn't want us to come over every time the board crashed and **TOOK IT DOWN!**

Metal Shop Private will return when Taran gets out, hopefully sometime in June.

April 27, 1986

Metal Shop AE is now the proud possessor of a full 40 megs of online storage. It also has added an individual password system for greater board security and now has an email messaging service online.

Metal Shop AE is sysoped by Cheap Shades. It is one of the main distribution centers for Phrack Inc. It has the complete Phrack series online as well as almost 1000 other files.

To become a member of Metal Shop AE, contact Cheap Shades, Taran King, or Knight Lightning.

To upload files for distribution in Phrack Inc. be sure to upload them to drive E which will save your file to a non-public viewable drive where it will stay until it is edited for Phrack.

Mark Tabas and Karl Marx Busted

May 2, 1986

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The story goes like this; Mark Tabas was working at a plant in Denver where credit card blanks are manufactured. He decided to take a few. He and Karl Marx then went about finding someone with an embossing machine to print some stuff onto the blanks. They were able to find someone and agreed to meet at a motel to do the work. Everything went well. They were able to print card numbers, names, and expiration dates that they had gotten onto the blanks. To celebrate they ordered a bottle of champagne from room service, and paid for it with one of the cards. At that point the guy with the embosser pulled his badge, Secret Service! Now Mark Tabas and Karl Marx are facing forgery and carding charges along with theft for the blanks.

Information provided by Sally Ride...Space Cadet

(Editor's Note: At the time that this information was gained, Sally Ride commented that it may be a rumor. Any inconsistencies are not his fault)

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May 15, 1986

We at Phrack have since uncovered more information about this bust. Apparently a guy named Will Bell, who's handle was Jack Bell, set up Karl Marx and Mark Tabas. Will Bell had the embossing machine and was not a member of the Secret Service. Instead, he was the son of a member of the Secret Service (although maybe he was the son of a member of the FBI). Since he was not a fed, this was not a case of entrapment. It is believed that Will/Jack Bell is originally from the 312 (Chicago) area.

Information Provided by Jester Sluggo and The Sprinter

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FBI/Wylon In Action

On May 2, 1986, the homes of Cheap Shades and Kleptic Wizard received visits from Edward P. Nowicki, Special Agent of the Federal Bureau of Investigation.

This was not a bust in any way. This agent was trying to gain evidence for a telecommunications company known as Wylon, which is mainly based in the Colorado/Wyoming area. Apparently someone or several people had been calling Kleptic Palace AE and Metal Shop AE illegally and Mr. Nowicki wanted to know who had been placing these calls.

As far as Kleptic Palace AE, the calls in question were made on 2/9/86 5:12 AM, 2/9/86 4:33 PM, and 2/10/86 7:30 AM. Although no specific order is mentioned. The times of the calls made to Metal Shop AE are not available. A third place called was the home of TWCB Inc. At the time of these calls Whackoland was still up.

The agent expected all of them to have a caller log on the board but of course neither of their AEs kept caller logs. Not to mention the fact that no one would kept a caller log for three months anyway.

Kleptic Wizard got a message to Taran King which was then sent to me, and within the hour I arrived at Klepto's house where I discovered the FBI still around, so after killing another 45 minutes, I went inside and met with Klepto. Mr. Nowicki had left behind two things, his business card and a list of four suspects that he was specifically trying to bust. Apparently all four had been caught for Wylon abuse in the past.

I recognized the name at the top of the list almost instantly and as a result, saved a fellow phreak from a possible bust. Two of the others are rumored to have been warned as well. However if this is untrue then the other three still may be in great danger as of this writing. All of the suspects live in the Wyoming/Colorado area.

The homes of Cheap Shades and Kleptic Wizard were not searched and their boards were not looked at. The FBI agent even declined an invitation from Kleptic Wizard to see the bbs. This may be because he didn't have a warrant.

Information provided by

Administration Nominations?

May 6, 1986

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In late April 1986, The Administration decided to have their yearly membership drive for the group. The phreaks/hackers being voted on for membership included:

Blade Runner/Jester Sluggo/Knight Lightning/Oryan Quest/Phlash Gordon  
Recent Change/Sally Ride/Slave Driver/Taran King/The Marauder

Many of the above and others had thought that they had been voted into the Administration without even being asked. However this was not the case.

David Lightman stated that the nominations were made public so that the Administration members would know of the vote taking place on Administration BBS

1. Once the nominations were voted on, then the phreaks/hacks would be formally invited.

I now pose an important question. If David Lightman is the only regular board caller of the Administration, then how would the other members know how to vote?

So far the results of the votes have not been made public. Not that it matters that much because The Administration has now more or less completely fallen apart. It would appear that this new membership drive was an attempt to revive the group with new blood. However the group has been revived on its own, since the formers members regrouped again...at least temporarily.

Some Information Provided by David Lightman

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Trouble in Texas

June 2, 1986

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In the last week of May, David Lightman, decided to do a credimatic check on Blade Runner. To his great surprise, he found that Blade Runner worked for Southwestern Bell Security. He confronted Blade Runner with this information and shortly afterward received a visit from Southwestern Bell Security, who confiscated his terminal programs, his user files, notebooks, and g-phile disks. He claims that his user files and g-philes were scrambled so no one should worry too much.

Later that day, Sir Gamelord, sysop of World's Grave Elite, called David Lightman and said that Blade Runner was on the board and acting really strange. David Lightman told him what happened and they then hung up. The next day Blade Runner is a cosysop of World's Grave Elite as well as Thieve's Underground, sysoped by Jack The Ripper. Now Sir Gamelord denies the incident ever occurred. At this writing, David Lightman is laying low and retiring from the phreak world until things clear up.

Sir Gamelord's side to this story is quite different. Sir Gamelord said that he, Blade Runner, and Jack the Ripper were forming a group called the P.H.I.R.M. (see Phrack Pro-Phile 3 this issue) and that Lightman wanted to be in and to lead the group as a subsidiary of The Administration (like Team Hackers'86). They refused, and took away his cosysop access on their boards. Sir Gamelord says that Lightman is making this whole Southwestern Bell Security story up to get revenge on them.

However, Lightman claims that he was asked to be a member of The P.H.I.R.M., but refused because he didn't have the time. He did however recommend Digital Logic, Ford Prefect, and The Lineman (sysop of the Lost City Of Atlantis).

David Lightman has since received his disks back but will not be around on boards very much. The decision is up to you. I will try to get more information out on boards as soon as possible.

Information provided by David Lightman and Sir Gamelord

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Ninja NYC/Sigmund Fraud; Close Calls

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Sigmund Fraud, famous for his incredible proficiency at "social engineering" is now laying incredibly low after what is considered the closest call of his life.

The following must be regarded as pure rumor for the sake of non-incrimination of those involved. You readers know what I mean.

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The story goes like this, Sigmund Fraud and a friend (the same one who went to the Telepub'86 meeting in New York, however he has no handle) were able to convince their local Bell company that they were another part of the same company and were able to acquire; Call Forwarding, Call Waiting, Speed Calling, and Three Way Calling on to Sigmund Fraud's personal phone line. Since SF's friend lived in a Cross Bar (X-Bar) area he could not get these services so they decided to get them for Ninja NYC. They told him about it later.

Less than a week later, on the first Thursday of May 1986, Ninja NYC came home to discover 2 telco agents awaiting his return from school. What it boiled down to was that "he" had committed several felonies and to make matters worse, the people at the local Bell company identified Ninja NYC's voice as being the caller, AND HE ISN'T THE ONE WHO MADE THE CALL!!!! What it finally boiled down to was that Ninja NYC had really received a very scary personal warning.

About this same time Sigmund Fraud is getting home and to his great dismay, all of his new found phone features have been turned off!?! Sometime later (most likely after the telco agents had left) Sigmund gets a call from Ninja NYC. Ninja NYC of course tells him everything that had happened and warned him that he was next. Sigmund immediately called me. We both thought Sigmund was doomed and would be picked up very soon.

However this was not the case. The agents didn't show up and Sigmund had been given a golden opportunity to dump all his illegal items and get his story right. That night I received a call from Slave Driver and Sigmund call me on three-way and we discussed what to do next. The problem was that Sigmund didn't want to get rid of his illegal items. He had boxes, manuals, notebooks, and even a PBX in his room. I told he had 2 choices; Choice A: SF gets rid of his shit somewhere anywhere, and the telcos don't get any more evidence or, Choice B: SF leaves the stuff where it is, the telcos come over and take it and SF gets nailed worse.

When I left the conversation SF was still discussing what he should do. The next day, he was not visited by the telcos, he was not busted, but instead received a call from his local bell company and was given a very strong verbal warning.

Since that time, He has stopped answering his personal phone and believes that line to be monitored. Ninja NYC is almost definitely being monitored and people have been asked not to call him.

Of course that didn't stop Daniel Zigmond from calling him. This was in an attempt to help Sigmund Fraud, but regardless may have done more damage than good.

Information Provided by  
Sigmund Fraud/Slave Driver/Knight Lightning

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Telecomputist; Printed Newsletter

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June 8, 1986

From: Forest Ranger and "TeleComputist" staff,  
To: You!

I have drafted the idea for a newsletter and I stress the word newsletter. TWCB had promised everyone a 40+, glossy page magazine for an outrageous amount. I do not want to say that we are taking TAP over because we are not, but instead making amends for what TWCB did not do. To show our sincerity we will be offering the first issue free. It will be your basic newsletter with exceptional articles from experienced phone phreaks, computer hackers, and

telecom buffs. Each issue will be a set four pages but since this is the grand opening issue it will be longer (20 pages). For the first free issue please send a postage paid, self addressed envelope to:

TeleComputist Newsletter  
P.O. Box 2003  
Florissant, Mo. 63032

Also, please send subscriptions to the same address. The subscription fee for the newsletter will be twelve dollars a year, fifty cents for back issues. This is a monthly circulation and we encourage letters.

The "TeleComputist" Staff includes:

Forest Ranger/Data Line/Reverend Enge  
Ax Murderer/Chris Jones/Knight Lightning/Taran King/Mad Molester

Information Provided by Telecomputist Staff

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Reported by Jim Byers/Los Angeles and Jerome Cramer/Washington.

Typed for PWN's usage by The Seker

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News On Captain Midnight

April 28, 1986

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"Search for Cable TV Prankster Leads to North Texas"

The search for Captain Midnight, the disgruntled video prankster who briefly commandeered Home Box Office's satellite transmissions over the eastern two-thirds of the country early Sunday, has led federal investigators to North Texas, a Justice Department official said Monday.

John K. Russell, a Justice Department spokesman in Washington, told Knight-Ridder Newspapers that "the perpetrator is believed to be in North Texas." Later he said the search was in Texas "as well as other areas."

Other authorities told Knight-Ridder that investigators in the Dallas field offices of the FBI and the Federal Communications Commission (FCC) have been focusing on a tip that Sunday's four-minute cable interruption originated in North Texas.

FBI and FCC officials in Dallas could not be reached for comment Monday.

Captain Midnight interrupted a movie broadcast Sunday with a message protesting new fees being charged the owners of satellite dishes for access to HBO. The five line message, superimposed on a test pattern, said:

"Good evening HBO from Captain Midnight.  
\$12.95 a month? No way!  
(Showtime-Movie Channel Beware.)"

In January, HBO began scrambling its broadcasts to prevent owners of satellite dishes from unauthorized interception of the signal as it bounced from a satellite to cable television systems.

HBO told dish owners that they would have to buy a descrambler for \$395 and pay \$12.95 a month.

"While the man on the street may have once thought that Captain Midnight's message was limited to being a prank, it does represent a very serious threat to any company or entity using satellites to transmit information," said Alan Levi, HBO's manager of corporate public relations.

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Other:

Alan Levi: [212] 512-1659 (Cooperate affairs)  
David Pritchard: [212] 512-1413 (Cooperate affairs)  
Tim Larker: [212] 512-5666 (Network scrambler assistant)  
New York City FCC: [212] 620-3438 (Federal Communications Commission)  
HBO Cooperate Offices: [212] 512-1000  
-----

David Lightman:

I have spoken with several people about 'Captain Midnight'. I have spoken to everyone above. This David Pritchard tried to tell me this:

DP = David Pritchard  
DL = David Lightman  
-----

DL: Where do you think this 'Captain Midnight' is?

DP: Would assume he is in the North Texas region. Possibly 214.

DL: What makes you think this?

DP: We believe this is true due to a tip from a Dallas resident.

DL: How do you know that he was not lying to lead you away from the real



Captain Midnight?

DP: I know he was probably not lying because he left us his mailbox number.

DL: Which is?

DP: I cannot release that information right now.

(This conversation went on for a while. Possibly 10-15 minutes...)

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David Lightman earlier had spoken with Alan Levi...  
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DL: Yes. Do you have any idea who this Captain Midnight might be?

Alan: No, but we are fairly certain it is someone in the 212 area with access to the scrambling offices of HBO. The knowledge necessary for what this guy did could not be gotten very easily without getting it from our departments.

DL: Well, I believe I know who this Captain Midnight is.

Alan: Could you please tell me who you think Captain Midnight is?

DL: No. If it is the person I suspect, I would rather not cause any trouble for them.

Alan: You wouldn't cause much trouble for him.

DL: Isn't what this guy did a federal offense?

Alan: Well, yes it is, but you would be surprised how many people get away with breaking federal laws.

(He actually said that guys!)

DL: Hmm.... What would happen to him?

Alan: We would just let him know that what he did was not a prank. It was very serious. It could possibly change the entire industry and unless he stops transmitting over our satellites, we will ask the Department of Defense to handle it from then on.

DL: Well, I would need to think about it a little more. Can I call you back a little later?

Alan: Could you just give me your number and I will have David Pritchard call you back?

DL: It depends on who else will get my number.

Alan: Just me. I will consider this conversation and all of the conversations that follow to be an anonymous tip.

DL: Sure then. It is (214) 733-5162.

Alan: Thanks. Then I will have David call you if you do not call me back before tomorrow evening.

DL: That would be fine. Thanks.

Alan: Thank you.

-----End of Conversation-----  
Well as you may have guessed, my number (mailbox) was given to the FCC, FBI, and David Pritchard as well as Tim Larker. I got pretty pissed so I called David Pritchard. That was the first conversation I posted. We (Alan Levi, David Pritchard, Tim Larker, the FCC, the FBI, Knight-Ridder Newspapers, and I) now have the country believing that the transmission originated in Dallas. Of course it did, but you may see that changed soon. I plan on another conversation with these intelligent people tomorrow 5:00 PM.

If you do call these guys, please do not mention the Administration, Team Hackers'86, any member of either group or me to them as being the transmitter. You have no proof at all about that. I did not say if we were involved or not. That will be left up to your imagination.

Information and Interviews Provided by David Lightman

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Captain Midnight Busted!

June 6, 1986

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Captain Midnight probably isn't sleeping too well these days. His name, still publicly unannounced, is probably known by many, including the FBI. He has already been reported to have been fired from his job at an uplink facility, of which there are only around 100 in this country. The facility is east of the Rockies and does not operate after midnight. Also, a newer type of equipment was used of which there are only a few in the country. We expect charges to be filed any day now, possibly just in time for the June 12th congressional hearings on signal jamming. Penalties could include a one year jail sentence and up to \$50,000 in fines; \$10,000 maximum of which would be for jamming only.

We expect FM America to come to Captain Midnight's rescue financially by raising defense money. All segments of the TVRO industry condemned the signal jamming. It is interesting to note the grins and smiles while discussing the subject, however, FM America knows who "Captain Midnight" is and even interviewed him live on the air on "FM America." Tapes of FM America including Captain Midnight's interview have been turned over to federal investigators.

Several benefits can be realized by Captain Midnight's signal "interruption." Mainly, the fact is now known by everyone that it can be done. There are no secrets either in that a transponder can easily be confused into locking onto another signal and ignoring the correct signal as interference. Also, the signal that controls the satellite's positioning could also be accessed. The overall possibility that our entire "satellite system" in general can be rendered ineffective from the ground is kind of unnerving.

Signal scrambling did not interfere with the HBO signal lockout because a higher wattage beam over-powered it. The networks all use pretty powerful beams which are used 24 hours-a-day so they would be harder to jam. If we had to guess which uplink was used to jam HBO, we would pick one that was already locked into the same satellite, such as one of the superstations. (Hint, Hint!)

Information provided by Handsomest One

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Who is Ralph Meola?

May 20, 1986

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Ralph Meola is the Head of AT&T Security in New Jersey and theoretically everywhere else as well. He is known to have a computer file on hackers and phreaks, and an investigative team, that rivals John Maxfield's "BoardScan".

How did Meola enter into the public eye? Well, we at Phrack really aren't completely sure but, the general idea is that a friend of Sigmund Fraud (See TelePub'86 in PWN issue III), using social engineering in order to gain information from AT&T, somehow came into contact with Ralph Meola.

Later, Sigmund Fraud was also brought into this and decided to give Ralph Meola a call himself. With Gin Fizz on Sigmund's 3-Way, he got Meola on the phone and said, "Hey! This is Sigmund Fraud!" Typing sounds could be heard in the background and in a few seconds Meola responded with Sigmund Fraud's real name, address, phone numbers, and the names of several BBSes that he was on.

Meola then insisted that Sigmund Fraud give him his account on Stronghold East or at the very least, all of the newuser logon procedures and passwords. Failure to do so would mean big trouble for Sigmund Fraud. Sigmund of course gave Meola the always nice "fuck you!" and hung up on Meola.

Although Sigmund Fraud was (at the time) on Metal Shop Private, Meola didn't know it, or at least he didn't mention it as a BBS that Sigmund was on. This means that Meola has no agents on Metal Shop Private. It is also known that Meola has no agents on Stronghold East. Otherwise he wouldn't have needed the

password information from Sigmund. It is believed that Meola was on Stronghold East before the MASSIVE purge several months ago.

Information Provided by Sigmund Fraud/Gin Fizz/Slave Driver  
The assumptions and theories are my own -KL

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Slave Driver has since sent Ralph Meola the following letter:

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TO: Ralph Meeola  
Head AT&T Security

From: Slave Driver

Re: My user.

Hello. I find it rather hard to get in touch with you through normal means, but give me some time.

I was told you have been threatening my users, trying to get access here. That is not good. Ralph, if you want access just ask for it, don't go threatening my users. That was not an intelligent idea, Ralph.

If you are such a big guy [in your mind, and uh, hand] why not give me a call. I'm sure you have my number. I would be very interested in talking to you. So, you decide, Ralph. Either way, we'll talk one day.

Bye Ralph,

Slave Driver

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==Phrack Inc.==

Volume One, Issue Six, Phile 11 of 13

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\*--+^ Phrack World News ^+==\*

Issue Five/Part 3

Compiled and Written By

Knight Lightning  
=====

#### Cracking Down On Abuse -----

This article is from the January issue of MCI World, a monthly newsletter published by MCI for it's employees.

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The nationwide attack on telephone fraud got a boost recently when the U.S. Secret Service joined the effort to curb the crime that costs the industry millions in lost revenue annually.

The Secret Service used new jurisdiction over the telephone fraud for the first time to arrest five individuals in raids on four illegal "Call-Sell" operations in New York City last November.

The five suspects are awaiting trial in federal court on charges based on a Secret Service investigation conducted in cooperation with MCI and other members of the long distance telephone industry.

The defendants were charged with violation of a law on Fraud In Connection With Access Devices which carries maximum penalties of 15 years imprisonment and a fine of \$50,000, or twice the value of the fraudulent activity.

Several other investigations are under way and future arrests are expected, according to a Secret Service spokesman.

MCI cooperated in the investigation as a company and through membership in the Communications Fraud Control Association (CFCA), made up of some 35 telephone industry firms.

"Because it's an industry-wide problem, we have organized to crack down on all kinds of fraud, from the isolated 'hacker' to more organized schemes to use long distance lines illegally," said Everick Bowens, senior manager of MCI security investigations and president of CFCA.

The Secret Service said that in the New York cases, the defendants operated Call-Sell businesses out of their homes and charged "customers" a flat fee for making long distance calls. They used "Blue Boxes" and stolen or compromised authorization codes or credit card numbers to use the long-distance networks of several companies.

Blue Boxes are electronic tone-generating devices used to bypass billing systems and gain access to company networks. They can be assembled from generally available electronic parts or they can be purchased ready-made through illegal sources.

In the New York raids, agents seized unauthorized cods and credit card numbers, four Blue Boxes and more than 20 telephones.

It is estimated that in 1984, fraud in the telecommunications industry totaled \$500 million nationwide, and approximately \$70 million in the New York City area.

CFCA members are primarily inter-exchange carriers, such as MCI, but resale carriers and some Bell Operating Companies (BOCs) are also members, along with representatives of computer services and credit card companies.

Bowens says CFCA is intensifying efforts to stop the spread of fraud. Among other things, CFCA is developing educational packages for carriers and the public to promote widespread understanding of telephone fraud and ways to counter the crime.

"Our aim is jointly to prevent, detect, investigate and prosecute any fraudulent use of our long-distance networks," Bowens said.

Authorization codes are obtained by theft from individuals and by "hackers" who randomly try combinations of numbers by telephone or through computer scanning of number combinations until a working code is "hit." Illegally obtained codes are fraudulently used by "boiler room" telemarketing operations, for example, or are passed along for use by individuals.

MCI had developed software to detect illegal entry into its network and it is expected that the spread of dial 1 service, in which authorization codes are not used, will help reduce the incidence of telephone fraud.

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Comments from the Bootleg:

You reckon they mean us????????????????

What's wrong with them, can't they take a joke????????????

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#### The Many Faces Of Fraud

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The following is an article from the January issue of MCI World, a monthly newsletter published by MCI for it's employees.

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This new year will see a stepped up MCI attack on telephone fraud--illegal use of the long distance network through access by stolen authorization codes or electronic devices. The offensive is led by Everick Bowens, senior manager of MCI's security investigations department and president of the industry-wide Communications Fraud Control Association (CFCA). Success in curbing this theft of service has earned MCI security investigators a reputation as super sleuths at headquarters and in the divisions.

New teeth were added to the attack on telephone fraud when the U.S. Secret Service was assigned to augment continuing investigative efforts by the FBI and other law enforcement agencies.

Because telephone fraud is outright theft from the company, MCI is determined to prevent, detect, investigate and prosecute any illicit use of its network. To learn more about how MCI conducts its anti-fraud campaign, MCI World talked with Bowens.

MCI World: Is it true that MCI has systems that can detect fraudulent activity while it is occurring?

Bowens: Yes, our fraud systems detect abnormal usage and hacking. The systems also help us to track down offenders even when we have only the authorization code he or she is abusing. Because we can profile abusers and trace phone calls, it is easier for us to prepare cases for prosecution.

MCI World: Abuses involving computer "hacking" to get authorization codes seem to attract public attention. But there are other types of fraud equally damaging to the telecommunications industry. Would you identify some of these?

Bowens: The primary form of abuse is by "hackers," who use computer programs to derive customers' authorization codes. These codes can be widely disseminated via electronic bulletin boards. Because many of these boards are public, the codes fall into the hands of anyone with access to the boards. We also encounter electronic toll fraud, which involves tone-generating devices that allow offenders to place fraudulent calls.

MCI World: Is one type of fraudulent activity more prevalent than another?

Bowens: Nationwide, fraud most frequently originates from military posts, college campuses, and prisons--places where there are numbers of people far from home, or who have little else to do but manipulate the telephone. This type of abuse prompts the bulk of our investigations.

MCI World: Who is most likely to commit fraud? Is there a general profile of the common offender?

Bowens: Computer crime typically occurs in affluent, metropolitan suburbs and involves juveniles. Electronic fraud also occurs in major metropolitan areas. Other abusers, such as high-pressure tele-marketeers, usually follow the coast lines. California and Florida, for "boiler room" operations in which phone service is used illegally to sell merchandise. However, fraud can't be totally attributed to any specific group at any particular time.

MCI World: How can you keep up with code abuse and fraud? Don't offenders change frequently?

Bowens: Interestingly enough, the patterns don't change much. Those who commit fraud form a finite community that doesn't expand a great a great deal over time. Casual offenders, individuals who may take advantage of a "hot" toll free number, will use the number only when it's hot. Once the number no longer works, they're not likely to repeat the offense. On the other hand, repeat offenders are dedicated to getting something for nothing. They're somewhat easier to identify because they commit the same offense over and over.

MCI World: How does MCI know when it is the target of fraudulent activity?

Bowens: Our systems generally alert us, or an employee or a customer informs us. People know the MCI name. When they recognize something happening illegally with an authorization code, they'll get in touch with us. People generally feel that a cheat is a cheat, a crook is a crook, and if they have to pay full value for a phone call they see no reason why someone else shouldn't. There also are professional tipsters who go from one company to another offering information for a price. However, we rarely deal with them.

MCI World: Which MCI people, by the nature of their jobs, are most likely to detect or at least suspect, fraudulent activity?

Bowens: Our switch technicians have been very instrumental in detecting abuse. They're in a position to identify extensive busy signals on circuits, abnormal calling patterns, and code use. They've identified many hackers just by reviewing their daily call statistics. Employees in our billing department are also good at spotting unusually large bills and abnormal patterns. Though most fraud is detected by the systems we have in place, the human eye continues to be extremely helpful.

MCI World: In addition to working with internal people to help detect fraudulent activity, you also rely on the expertise of external agencies. Which outside agencies assist you with investigations.

Bowens: When fraudulent activity involves the theft or illicit use of authorization codes or credit calling cards, MCI and the Secret Service work together to investigate the case. If other activity is involved, such as the use of our service in furtherance of other crime, MCI works with the FBI. When the U.S. Postal Service is manipulated in a fraud case, MCI and postal inspectors investigate together. Additionally, Bell Operating Companies (BOCs) often provide hard evidence in cases that MCI prosecutes.

MCI World: When you are alerted to suspected fraudulent activity, what steps do you take to open and pursue the case?

Bowens: Security investigators contact the customer whose code is being abused, advise them of MCI's suspicions, and attempt to confirm them. If the response confirms their suspicion of fraud, they open the case.

Normally, an investigation entails much research into toll records to identify abusers, unusual call patterns and the parties who might be involved in illicit activity. We also interview parties receiving the calls and document their statements. Once we collect sufficient evidence, we decide whether a case should be pursued as a criminal or civil action.

MCI World: How long does it normally take MCI's investigators to "crack" a case?

Bowens: Typically, investigators can crack a case within hours. Identifying fraud suspects is the easy part. Amassing the evidence--dotting all of the legal i's and crossing the t's--is tougher. Gathering evidence may take weeks and large cases involving many parties can take months to solve.

MCI World: With fraudulent activity knowing no geographical restrictions, how do you segment the problem divisionally?

Bowens: The security investigations department acts primarily in an advisory capacity, helping investigators in the divisions with procedural matters. The divisions generally take responsibility for investigating fraudulent activity within their jurisdictions and corporate investigators pursue cases that are large in scope or require specific expertise. Corporate also takes on cases involving offenders operating in more than one division.

MCI World: Can you elaborate on MCI's goals for reducing the level of fraudulent activity?

Bowens: We want to reduce fraud to the lowest possible level. One of MCI's goals is to cut fraud by more than half in 1986. We want to be the industry leader in curbing this illegal activity.

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Broadway Hacker Turned Fed Informant?

June 2, 1986

-----  
Broadway Hacker recently called Phreakers Quest and left feedback to the sysop of that system (Shawn) saying, "I do believe that some of this information here is illegal." Shawn called Dark Creeper and reported this to him who then later told it to me.

Sometime later, Broadway Hacker called Knight Bandit to voice validate him for The Radio Station. He claimed he was some sort of fed and that KB would be hearing from someone in Bell Security.

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The Radio Station is down because Broadway Hacker has sold his computer, his disks, and everything else and is moving to his new job at an unknown destination. When I spoke with him, he went on that he sold his user log, but would not comment on that any further. He wanted me to print that he was a fed and that all of his former users would soon be receiving visits from the FBI. This is exactly what he told Phantom Phreaker and several others which started a mass riot in the phreak world. One result was the takedown of Alliance for fear of its safety. It since has been put back up.

Broadway justified his actions by saying that by telling rodents he was a fed, it would keep them off his board. Later he said that since he is leaving the phreak world and no one knows where he is going, "To hell with the phreak world, let it fall apart and die for all I care." So this fed scare is an attempt to do just that. Was it a joke? Did he mean that really? I don't know. Maybe he did mean it then but now has changed his mind...

No one should be worried about this, everything is ok, and Broadway is not working with the FBI. He now claims that he needed his line free for business calls and all of the above were attempts to get people not to be calling him as he didn't have the time or patience. Use your own judgement.

Broadway Hacker still has his Vic 20 and an old modem and is attempting to get back on boards. He has also stated that the Radio Station BBS will be put back up at the end of the summer. Where it will be run from is unknown although,

Broadway speculated that when it returns it would be run off of an Amiga.

Information Provided by  
Broadway Hacker/Dark Creeper/Knight Bandit/Phantom Phreaker

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==Phrack Inc.==

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\*--+^ Phrack World News ^+==\*

Issue Five/Part 4

Compiled and Written By

Knight Lightning

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## Grown-Up Laws Sought For Computer Criminals

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By Dave Skidmore (Associated Press)

WASHINGTON—Teen-age computer hackers are giving way to a new generation of people who steal information from computers for profit rather than fun, the head of a House crime panel said Wednesday.

"The hackers were the first generation we saw. Now we have a lot of professionals who are getting into the business of accessing computer data bases," said Rep. William J. Hughes, D-N.J. [609/645-7957 or 202/225-6572], the sponsor of legislation aimed at helping law enforcement authorities better cope with the problem.

Hughes commented as the House subcommittee on crime, which he heads, studied the proposed Computer Fraud and Abuse Act.

Teen-age computer hobbyists, motivated fun and desire for status among fellow hobbyists, use home computers and the telephone to "hack" into government and industry data bases.

Now, Hughes said, hackers' techniques are being increasingly used by industrial spies who sell trade secrets gleaned from corporate computers and thieves who change bank records to steal millions of dollars.

"Computer crime is probably one of the fastest growing areas of crime. (It's) going to make the old robbery and burglary a little passe with certain professionals," he said.

Hughes' bill, cosponsored by Reps. Bill McCollum, R-Fla [202/225-2176], and Bill Nelson, D-Fla [202/225-3671], creates three new offenses.

1. It forbids unauthorized access to a computer and drops a requirement that the government prove information in the computer was used or altered.
2. It outlaws "pirate bulletin boards" used by hackers to trade secret computer codes and passwords.
3. It makes it a felony punishable by up to five years in prison and a \$250,000 fine to maliciously cause damage in excess of \$1,000 to a computer program or data base.

That section of the bill would apply to so-called "Trojan Horse" programs which, when achieving access to another computer, destroy all the data and programs in that computer.

The legislation is intended to plug loopholes in anti-crime legislation passed by Congress in 1984, Hughes said. It applies to computers used by the federal government or its contractors and bank and loan association computers.

Hughes said he expected his bill and similar legislations sponsored by Sen. Paul S. Trible Jr., R-Va [804/771-2221 or 202/224-4024], to reach the House and Senate floors sometime in May.

Information Provided by Blue Buccaneer

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The following is a critical breakdown of the above article.

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Blue Buccaneer:

Concerning this law: I always thought it would be more fun to hack for cash, but hey... Anyway, the three new offenses are what I am not to fond of:

- 1) "forbids unauthorized access to a computer" (Gosh, really?) "and drops a requirement that the government prove information in a computer was used or altered" Now what kinda law is that?! The government can just arrest someone and not have to prove anything? COME ON!
- 2) "It outlaws 'pirate BBSes'" When will these people learn the correct terminology? Pirates trade warezzzz, not 'secret passwords and codes'. The point is, that because this is a federal law, it will apply to all states. We aren't talking pussy-laws anymore. Wouldn't it be damn awful if just running the stupid BBS was a crime? Besides that, I thought we had a right to freedom of the press. Again, COME ON!
- 3) "and a \$250,000 fine to maliciously cause damage in excess of \$1000 to a computer program or data base". Excuse me for asking, but can one "maliciously" destroy data? And isn't a quarter of a million dollars a bit much for a teen-ager on a regular allowance? And that much for \$1000 damage? Shit, I wish my insurance company paid like that when I wreck my car. Once again, COME ON!

And then, I guess this is the journalist's fault, but what the hell does that paragraph on Trojan Horses have to do with this shit? I mean really! Do you think Joe Blow in the street is going to go: "Whew, for a minute there I was afraid that new bill might just skip over those Trojan Horse things." I'd kinda assume Trojan Horses were covered under the "maliciously" destroying data rule.

Above written by Blue Buccaneer

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Computer Kids, Or Criminals?

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Mr. Slippery, age 12, never thought playing on his home computer amounted to much more than harmless fun -- until a mysterious call from a stranger one day proved otherwise. "I got a funny phone call from someone offering me money to destroy a bank's records," said Slippery, identified by his hacker alias. "At that point in time, I realized that that's an incredible way to launder money. That if I was real smart, I would move out of the whole thing, because that was an obvious point at organized crime, to me."

Hacking, or using a personal computer to trespass by phone lines into the private computer systems of corporations, foundations, universities and banks, is a new form of organized crime, say experts. In the last year or two, a new, sophisticated breed of hacker has emerged. Their ages vary, from the early hackers who started at 14, and have now entered college, to adults who operate computerized crime networks, but their motives are similar: criminal.

When Mr. Slippery started hacking seven years ago he as an exception among pimply faced, curious kids whose computers were toys for cheap, and typically harmless, thrills. For four years, he lived up to his alias, eventually penetrating top security government computers at the Department of Defense (DOD) and the National Security Agency (NSA). Mr. Slippery remained undetected until his last several weeks as a hacker. He was never caught, never convicted. Toward the end, he realized government security agents were following him and decided to put away his phone modem for good.

"After about four years of this, though, I started realizing that an entirely new crowd had sprung up," observes Mr. Slippery, now a 19-year-old ex-hacker. "You now have the 14 year olds who were running around destroying things seeing how much trouble they could cause." Computer crime experts say the hacker problem is getting worse, even though industries are increasingly reluctant to discuss the topic. "The malicious hacker problem is continuing to increase drastically and is getting far more serious," said Donn B. Parker, author of

Fighting Computer Crime and a computer and data security consultant at SRI International, a California-based, non-profit research institute.

"The lowering costs of equipment, the attraction of it for new kids coming into it as a rite of passage, points to increasing vulnerability of American business to the hacker problem." Parker's expertise got him hired as a technical consultant to the movie War Games about two teen-age hackers who penetrate government defense computers. Where there is evidence of serious computer hacker crime is on electronic bulletin board systems (BBSes), where hackers share gathered intelligence. "Phone companies have huge investments in their equipment that is highly vulnerable to the hackers, who have figured out how to beat them, and have used pirate boards for their intelligence purposes," said SRI International's Parker.

"A large proportion of these kids are, in fact, juvenile delinquents with other arrest records." Recently, a hacker posted this on a local BBS:

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I live in Cleveland and the Pheds are fucking everywhere. This guy who goes by the alias Lou Zer got caught and they told him if he narced on like 5 people he would get off with probation so he did that. Now like half the 2300 club has been busted and this kid has a lot of problems in the future. Also I have seen cops that I know of dressed as fucking federal express guys. Try and avoid using them. Also, here's some PBXs to fuck with. They belong to Standard Oil.

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--Later, Sir Gallahad

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Other BBSs post lists of telephone numbers of Fortune 1000 corporations, banks, credit bureaus, universities, and foundations.

Admittedly, many of the numbers are invalid, say experts. Though there are BBSes that admit members only by invitation and operate as part of a computer underground, others can be accessed by anyone with a computer and a phone modem. Often the boards carry foreboding names like The Sanctuary, Future World, Dark Side, Deathtrap and Speed Demon Elite. Computer crime is sometimes called the perfect crime. Its perpetrators are anonymous hackers using aliases like Phantom Phreaker, Big Brother, Bootleg, Sigmund Fraud, and Scan Man.

John Maxfield is a computer security consultant who lives in a downriver suburb. Maxfield spends most of his working hours scanning BBSs, and is known by computer crime experts as a hacker tracker. His investigative work scanning boards has resulted in more prosecutions of computer hackers than anyone else in the field, say sources familiar with his work. Maxfield, who accepts death threats and other scare tactics as part of the job, says the trick is knowing the enemy. Next to his monstrous, homemade computer system, Maxfield boasts the only file on computer hackers that exists. It contains several thousand aliases used by hackers, many followed by their real names and home phone numbers. All of it is the result of four years of steady hacker-tracking, says Maxfield. "I've achieved what most hackers would dearly love to achieve," said Maxfield. "Hacking the hacker is the ultimate hack."

Maxfield estimates there are currently 50,000 hackers operating in the computer underground and close to 1,000 underground bulletin boards. Of these, he estimates about 200 bulletin boards are "nasty," posting credit card numbers, phone numbers of Fortune 500 corporations, regional phone companies, banks, and even authored tutorials on how to make bombs and explosives. One growing camp of serious hackers is college students, who typically started hacking at 14 and are now into drug trafficking, mainly LSD and cocaine, said Maxfield. This is an example of a recent BBS posting:

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WANTED: LSD, of any kind. Leave me mail if you're willing to talk prices, I'll take anything up to \$5 a hit. \$3 is more likely.

-----  
--urlord

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The BBSs are versatile teaching tools, too. Hackers post detailed tutorials on:

HACKING: Using a personal computer and modem to trespass into the private computer systems of corporations, foundations, universities, and banks.

CARDING: Using valid credit card numbers obtained from discarded carbons, accounts posted at video rental stores, or even by hacking credit bureau computers.

TRASHING: Sifting through trash to find discarded credit card carbons, receipts, computer passwords, code words, confidential phone company directories.

PHREAKING or FONING: Manipulating phone systems, usually to make long-distance calls at no charge.

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Below is an excerpt from a four-part tutorial on credit card fraud posted on an exclusive East Coast BBS for elite advanced hackers:

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Carding! By Music Major. Believe it or not, without carding, a damper would be put on the computer users of America (and especially Canada). Can you imagine trying to save enough money to BUY a 2400 baud modem and a 30 meg drive for a BBS? Oh, of course it can be done, but considering that a majority of the active computer users are still in school, and most do not have a steady job, it will take too long, and cost too much for this average person to spend on a BBS. Working at minimum wage at a part-time job, it would take 30 weeks of CONSTANT saving to put up the BBS (with good modem and good drive). Not a pretty thought! When the going gets tough, the tough go carding!

Music Major goes into more detail on later, he warns younger hackers about the possible risks of trying a method he claims he invented: "I have called this method foning for cards. To be convincing, you MUST have a fluent tongue and a semi-deep voice (skip this part if your voice is still cracking--refer back when you get a real voice)."

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Maxfield's operation is called BoardScan. He is paid by major corporations and institutions to gather and provide them with pertinent intelligence about the computer underground. Maxfield also relies on reformed hackers. Letters of thanks from VISA and McDonald's decorate a wall in his office along with an autographed photo of Scottie, the engineer on Star Trek's Starship Enterprise.

Often he contacts potential clients about business. "More often I call them and say, I've detected a hacker in your system," said Maxfield. "At that point, they're firmly entrenched. Once the hackers get into your computer, you're in trouble. It's analogous to having roaches or mice in the walls of your house. They don't make their presence known at first. But one day you open the refrigerator door and a handful of roaches drop out."

Prior to tracking hackers, Maxfield worked for 20-odd years in the hardware end of the business, installing and repairing computers and phone systems. When the FBI recruited him a few years back to work undercover as a hacker and phone phreak, Maxfield concluded fighting hacker crime must be his mission in life.

"So I became the hacker I was always afraid I would become," he said. Maxfield believes the hacker problem is growing more serious. He estimates there were just 400 to 500 hackers in 1982. Every two years, he says, the numbers increase by a factor of 10. Another worrisome trend to emerge recently is the presence of adult computer hackers. Some adults in the computer underground pose as Fagans, a character from a Charles Dickens novel who ran a crime ring of young boys, luring young hackers to their underground crime rings.

Courtesy of Galaxy Girl and Silicon Thief  
Major Editing by Knight Lightning  
Written by Lisa Olson (News Staff Writer for Detroit News)

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A few notes: It is my assumption that Music Major's Carding Tutorial was from KL actually four posts made on the Carding Subboard on Stronghold East. If this is true then it would mean that at the time or previous to the time of this article Maxfield was on SE. This post was probably taken in before the MASSIVE user purge on Stronghold East.

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CONNECTED NODES AS OF 10/05/88  
TOTAL NODES = 2491

| Node     | Site                                       | System             |
|----------|--------------------------------------------|--------------------|
| DOCCRC   |                                            | OS CP6             |
| UNCACDC  |                                            |                    |
| UNCAMULT |                                            |                    |
| EWC      |                                            | VMS                |
| DKATS11  | Aarhus Tek Skole (ATS)                     | IBM VM/SP R4       |
| DKJAU11  | Aarhus Tekniske Skole, Denmark             | IBM VM/SP R4       |
| DKAAUCHE | Aarhus Univ                                | VMS                |
| ACUVAX   | Abilene Christian Univ                     | VMS                |
| FINABO   | Abo Akademi                                | DEC VMS 4 3        |
| ACADIA   | Acadia U                                   | NOS                |
| IMIAGIP1 | AGIP S p.A.                                | IBM MVS/XA V 2 1.5 |
| ALBION   | Albion College                             | VMS                |
| ALCANKTN | Alcan Int Ltd KRDC                         | VMS                |
| FINALKO  | Alko Research Lab , Finland                | IBM MVS/XA         |
| ALLEGVM  | Allegheny Col                              | VM/SP              |
| EB0UAB51 | Altes Energies-U A. Barcelona              | DEC VMS            |
| APSEDOFF | American Physical Soc                      | UNIX BSD           |
| AUVM     | American University                        | VM/SP HPO          |
| AUVM2    | American University                        | VM/SP              |
| AMHERST  | Amherst College Acad Comp Ctr              | VMS                |
| TRANAVM1 | Anadolu Univ                               | VM/SP R 5          |
| TRANAVM2 | Anadolu University, Eskisehir              | IBM VM/SP R5       |
| ANNENRES | Annenberg Res Instit                       | UNIX               |
| APPSTATE | Appalachian State U                        | VMS                |
| ANLCMT   | Argonne Chemical Tech Div                  | VMS                |
| ANLCHM   | Argonne Chemistry Division                 | VMS                |
| ANLHEP   | Argonne High Energy Physics Div            | VMS                |
| ANLMST   | Argonne Materials Sci and Tech             | VMS                |
| ANLNBI   | Argonne Nat Lab Admin NBI                  | UNIX BSD           |
| ANLADM1  | Argonne Nat Lab Admin NBI 1                | OASYS              |
| ANLADM2  | Argonne Nat Lab Admin NBI 2                | OASYS              |
| ANLEES1  | Argonne Nat Lab EES NBI                    | OASYS              |
| ANLNBI2  | Argonne Nat Lab EES NBI                    | UNIX BSD           |
| ANLEES2  | Argonne Nat Lab EES NBI                    | OASYS              |
| ANLEES3  | Argonne Nat Lab EES NBI                    | OASYS              |
| ANLEL    | Argonne Nat Lab Elec Div                   | VMS                |
| ANLEES   | Argonne Nat Lab Ener & Environ             | VMS                |
| ANLNESEC | Argonne National Energy Sfw Ctr            | VM/SP              |
| ANLOS    | Argonne National Lab                       | MVS/SP             |
| ANLVM    | Argonne National Lab                       | VM/SP              |
| ANLVMS   | Argonne National Lab                       | VMS                |
| ANLCV1   | Argonne National Lab Cluster VAX           | VMS                |
| ANLEMC   | Argonne National Lab Electron Mic Ctr      | VMS                |
| ANLVG    | Argonne National Lab VAX Gateway           | VMS                |
| ANLPHY   | Argonne Physics Division                   | VMS                |
| ANLPNS   | Argonne Pulsed Neutron Src Proj            | VMS                |
| ASUIC    | Arizona St U Info Ctr                      | VM/SP              |
| ASUCP1   | Arizona State - U Chem/Phys/Solid State Sc | VMS                |
| ASUACAD  | Arizona State U                            | VM/SP              |
| ASUERC   | Arizona State U Eng Comp Ctr               | VM/HPO             |
| ASUCP2   | Arizona State U Lib Arts & Sci Res Cmpt Fa | VMS                |
| ASUACVAX | Arizona State Univ Acad VAX                | VMS                |
| FRIHAP31 | Assistance Publique                        | IBM MVS/SP         |
| ACMVM    | Assoc Computing Machinery                  | VM/SP              |
| AUDUCVAX | Auburn Univ                                | VMS                |
| AEARN    | Austria EARN                               | VM/SP              |
| BABSON   | Babson Coll                                | VMS                |
| BSUVAX1  | Ball State Univ                            | VMS                |
| BARILAN  | Bar Ilan U Comp Ctr                        | IBM MVS/SP 1 3.5   |
| BARILVM  | Bar Ilan Univ CC                           | IBM VM/SP R4       |
| BIMACS   | Bar llan Univ Math & CS                    | UNIX BSD 4 2       |

|          |                                       |               |
|----------|---------------------------------------|---------------|
| BAYLOR   | Baylor Univ                           | VMS           |
| BAYLRHSB | Baylor Univ HSB                       | VM/IS         |
| BCIT     | BCIT Computer Resources               | VM/HPO        |
| BCSC02   | BCSC                                  | VM/SP HPO 4 2 |
| NOBIVM   | Bedrifts Instit                       | VM/SP HPO R5  |
| BEARN    | Belgium EARN                          | VM/SP         |
| BGUNOS   | Ben Gurion U Comp Ctr                 | CDC NOS 2 3   |
| BGUVMS   | Ben Gurion University                 | DEC VMS 4 5   |
| BGUVM    | Ben Gurion University                 | IBM VM        |
| BENGUS   | Ben-Gurion U Math Comp Sci            | UNIX BSD 4 3  |
| BENTLEY  | Bentley College                       | PRIMOS        |
| CBEBDA3T | Berne University                      | IBM MVS/SP    |
| CBEBDA3C | Berne University                      | IBM MVS/SP    |
| BGUEE    | BGU Electrical Eng.                   | DEC VMS 3 7   |
| TRBILUN  | Bilkent University, Ankara            | AOS/VS V 7.57 |
| TECHMAX  | Biomed Engineering Technion           | DEC VMS       |
| BRCVAX   | Biotech Res Ctr                       | VMS           |
| BITNIC   | BITNET NIC                            | VM/SP         |
| INTERBIT | BITNET-Internet Gateway               | VM/SP/HPO     |
| BITNETDC | BITNIC Demo                           | VM/SP         |
| BNR      | BNR Information Systems               | VM/SP         |
| TRBOUN   | Bogazici Univ                         | NOS           |
| BCCHEM   | Boston College Chem Dept              | VMS           |
| BCVAX3   | Boston College Computer Center        | VMS           |
| BCVMCMS  | Boston College Computer Center        | VM/HPO        |
| BCVMS    | Boston College Computer Center        | VMS           |
| BCVAX1   | Boston College Computer Center        | VMS           |
| BCVAX2   | Boston College Computer Center        | VMS           |
| BCVAX4   | Boston College Computer Center        | VMS           |
| BOSTONU  | Boston U Acad Comp Ctr                | VM/SP HPO     |
| BUACCA   | Boston U Acad Comp Ctr                | VM/SP HPO     |
| BUIA     | Boston U Admin Ctr                    | MVS/XA        |
| BUASTA   | Boston U Astronomy VAX A              | VMS           |
| BUCHMB   | Boston U Chem Dept VAX B              | VMS           |
| BUCHMC   | Boston U Chem Dept VAX C              | VMS           |
| BUCHMA   | Boston U Chemistry VAX A              | VMS           |
| BUENGA   | Boston U Engineering VAX A            | VMS           |
| BUMETA   | Boston U Met Coll VAX A               | VM            |
| BUPHYA   | Boston U Physics VAX A                | VMS           |
| BOSTCIML | Boston Univ CIML                      | VM/SP         |
| BUMFGA   | Boston Univ MFG ENG A                 | VM/SP         |
| BUPHYC   | Boston Univ Physics VAX C             | VMS           |
| BOWDOIN  | Bowdoin College                       | VMS           |
| BGSUSTAT | Bowling Green State Univ              | VM/SP         |
| BGSUOPIE | Bowling Green State Univ              | VMS           |
| BRANDLOG | Brandeis Univ Administration (LOGOS)  | VMS           |
| BRANDEIS | Brandeis Univ Feldberg Comp Ctr BINAH | VMS           |
| BYULAW   | Brigham Young U Law Sch               | VMS           |
| BYUSTAT1 | Brigham Young Univ                    | VMS           |
| BYUADAM  | Brigham Young Univ                    | UNIX          |
| BYUSTAT2 | Brigham Young Univ                    | VMS           |
| BYUSTAT3 | Brigham Young Univ                    | VMS           |
| BNLDAG   | Brookhaven Nat Lab                    | VMS           |
| BNL      | Brookhaven National Lab               | UNIX BSD      |
| BNLVMA   | Brookhaven National Lab               | VM/SP         |
| BNLCHM   | Brookhaven National Lab               | VMS           |
| BNLCL1   | Brookhaven National Lab               | VMS           |
| BNLUX0   | Brookhaven National Lab               | ULTRIX        |
| BROWNCOG | Brown U Cognitive Sci                 | VMS           |
| BROWNVN  | Brown U Comp Ctr                      | VM/SP         |
| BROWNCS  | Brown U Computer Science Dept         | UNIX          |
| BROWNEP  | Brown U Physics                       | VMS           |
| BRYNMAWR | Bryn Mawr College                     | VMS           |
| IDBSU    | BSU                                   | VM/SP         |
| BUCKNELL | Bucknell U Comp Services              | CP6           |
| BKNLVMS  | Bucknell U Comp Services              | VMS           |
| BYUCOAL  | BYU Combust Lab VAX                   | VMS           |
| BYUETIBM | BYU Eng College                       | VM/SP         |
| BYUADMIN | BYU ISS                               | VM/SP         |
| BYUVAX   | BYU ISS VAX                           | VMS           |

|          |                                  |                    |
|----------|----------------------------------|--------------------|
| BYULIB   | BYU Library                      | VM/SP              |
| IPVCCN   | C.C.N. Pavia, Italy              | IBM VM/SP R5       |
| FRCCSC21 | C.C.S.C, Strasbourg              | MVS                |
| FRCCSC13 | C.C.S.C, Strasbourg, France      | IBM VM/SP5         |
| FRCCSC12 | C.C.S.C, Strasbourg, France      | IBM VM/XA SF2      |
| FRICB71  | C.I.C.B. Rennes                  | BULL MULTICS       |
| FRICB81  | C.I.C.B., Rennes, France         | CDC/NOS/VE         |
| FRIME51  | C.I.M.E., Grenoble, France       | DEC VMS            |
| FRICI71  | C.I.R.I.L., Nancy, France        | BULL MULTICS       |
| ICSCRAI  | C.R.A.I., Rende, Italy           | IBM MVS/SP 3 8     |
| IPACRES  | C.R.E.S. - Palermo, Italy        | DEC VMS            |
| INAMVSXA | C.R.I.A.I. Napoli - Italy        | IBM MVS/XA         |
| INACRIAI | C.R.I.A.I. Napoli - Italy        | IBM VM/SP          |
| FRIHBO11 | C.R.I.H.                         | VM/SP              |
| FRIHMA21 | C.R.I.H. de Marseille, France    | IBM MVS            |
| IBACSATA | C.S.A.T.A. - Bari, Italy         | IBM VM/SP R3 1     |
| FRCTN11  | C.T.N.                           | IBM VM             |
| IMIUCCA  | Calcolo Autom Milano, Italy      | UNIX 4 3           |
| CALPOLY  | Calif Poly State Univ            | VM/SP              |
| CALSTATE | Calif State U                    | NOS                |
| CALTECH  | Caltech                          | VMS                |
| CITXRAY  | Caltech                          | VMS                |
| CIT4381  | Caltech                          | VM/SP              |
| CITDEIMO | Caltech Astronomy DEIMOS         | VMS                |
| CITPHOBO | Caltech Astronomy PHOBOS         | VMS                |
| CITJULIE | Caltech CCO                      | VMS                |
| CITROMEO | Caltech CCO                      | VMS                |
| CITIAGO  | Caltech CCO IAGO                 | VMS                |
| HAMLET   | Caltech C3P/CCO                  | VMS                |
| CITHEX   | Caltech HEP                      | VMS                |
| CITCHEM  | Caltech XHMEIA                   | VMS                |
| CANISIUS | Canisius College CC              | VMS                |
| CARLETON | Carleton U                       | CP-6               |
| CMASV1   | Carnegie Mellon U Comp Srvs      | VMS                |
| DRYCAS   | Carnegie Mellon Univ Comp Clb    | VMS                |
| CMUCCVMA | Carnegie-Mellon U Comp Ctr       | VM/SP              |
| CWRU     | Case Western                     | VMS                |
| CUA      | Catholic Univ of America CC      | VMS                |
| CUAVAXB  | Catholic Univ of America CC      | VMS                |
| CUAVAXA  | Catholic Univ of America CC      | VMS                |
| CATCC    | Catonsville Comm Coll            | VM/SP              |
| FRMRS11  | CCSJ, Marseille, France          | IBM VM/SP          |
| FRCCUB11 | CCUB                             | IBM VM/SP5         |
| FRCCUP51 | CCUP, Marseille, France          | DEC VMS            |
| CDCCENTR | CDC Demo Ctr                     | NOS                |
| CEBAFVAX | CEBAF Computer Center            | VMS                |
| FRSAC12  | CEN-SACLAY DPhPE, Gif/Yvette     | IBM VM/SP          |
| BIBLIO31 | Centennial College               | VM/SP              |
| CENCOL   | Centennial College               | VM/SP 4            |
| CFR      | Central Florida Reg Data Ctr MVS | MVS/SP             |
| CFRVM    | Central Florida Reg Data Ctr VM  | VM/SP              |
| CMUVM    | Central Michigan Univ            | VM/HPO 4.2         |
| FRAIX11  | Centre de Calcul Aix-Marseille   | IBM VM/CMS         |
| FRBDX11  | Centre IC Bordeaux               | VM/SP              |
| FRSAC11  | Centre Scientifique CEA Saclay   | IBM VM/SP          |
| FRPOI11  | Centre Scientifique IBM Paris    | IBM VM/SP          |
| EMDCSIC1 | Centro de Calculo                | NOS 2-5-3          |
| IPGCUIC  | Centro U Italia Centrale         | IBM VM/SP R3 1     |
| LUXCEP11 | CEPS, Walferdange                | VM/SP              |
| FRTLS12  | CERFACS                          | VM/SP              |
| CERNADP  | CERN                             | IBM VM/SP          |
| CEARN    | CERN                             | VM/SP              |
| CERNVAX  | CERN                             | UNIX BSD           |
| CERNVM   | CERN                             | IBM VM/SP HPO R4 2 |
| GEN      | CERN                             | IBM MVS/SP 1 3.3   |
| CRVXP173 | CERN P173 Exp                    | VMS                |
| CRUXNMC  | CERN P173 Experiment             | DEC VMS            |
| CRUXNMCE | CERN P173, Geneva, Switzerland   | DEC VMS            |
| CRUXNMCD | CERN P173, Geneva, Switzerland   | DEC VMS            |
| CRUXNHD  | CERN P173, Geneva, Switzerland   | DEC VMS            |

|          |                                  |                    |
|----------|----------------------------------|--------------------|
| CRUXHYPM | CERN P173, Geneva, Switzerland   | DEC VMS            |
| CRUXNMC1 | CERN P173, Geneva, Switzerland   | DEC VMS            |
| CRUXNMC2 | CERN P173, Geneva, Switzerland   | DEC VMS            |
| CRUXHYPD | CERN P173, Geneva, Switzerland   | DEC VMS            |
| UNICC    | CERN, Geneva, Switzerland        | IBM MVS/SP         |
| CERNEMU1 | CERN, Geneva, Switzerland        | IBM VM/SP          |
| CEARNV2  | CERN, Geneva, Switzerland        | IBM VM/SP          |
| AECLCR   | Chalk River Nuclear Labs         | NOS                |
| CAS      | Chemical Abstracts Srv           | ULTRIX-32          |
| FRCICG71 | CICG, Grenoble                   | BULL MULTICS       |
| FRGREN81 | CICG, Grenoble, France           | CDC                |
| FRNICE51 | CICNT, Nice, France              | VMS                |
| FRCIRP71 | CICRP, Paris, France             | BULL MULTICS       |
| FRTOU71  | CICT - Toulouse                  | BULL MULTICS       |
| FRCICT81 | CICT Toulouse, France            | CDC/NOS/VE         |
| EMDCIE51 | CIEMAT                           | DEC VMS 4 7        |
| EMDJEN11 | CIEMAT (Junta Energia Nuclear)   | VM/SP              |
| IMICLVM  | CILEA                            | VM/HPO             |
| IMICLVX  | CILEA, Segrate - Milano, Italy   | DEC VMS 4 5        |
| IMIVMHEP | CILEA, Segrate - Milano, Italy   | IBM VM/HPO R4 2    |
| ICINECA2 | CINECA                           | DEC VMS 4 7        |
| IBOINFN  | CINECA - Bologna                 | RSX11-M            |
| ICINECA3 | CINECA - Bologna, Italy          | IBM VM/SP HPO R4 0 |
| ICINECA  | CINECA Bologna                   | IBM VM/SP HPO R4 2 |
| ICINECA1 | CINECA, Bologna                  | CDC NOS 2 4.1      |
| FRORS31  | CIRCE, Orsay, France             | MVS/SP             |
| FRORS12  | CIRCE, Orsay, France             | IBM VM/SP R4       |
| FRORS13  | CIRCE, Orsay, France             | IBM VM/SP R4       |
| IMICISE  | CISE - Milano, Italy             | IBM VM/SP HPO R3   |
| CITADEL  | Citadel Military Co of SC        | VMS                |
| CITADEL1 | Citadel Military Co of SC        | VMS                |
| CITADEL2 | Citadel Military Co of SC        | VMS                |
| FRCITL71 | CITI Lille                       | BULL MULTICS       |
| FRCITI51 | CITI 2                           | VAX VMS            |
| CLARGRAD | Claremont Grad School Comp Ctr   | VMS                |
| CLARMATH | Claremont Grad School Math Dept. | VMS                |
| CLARKU   | Clark Univ Off of Info Sys       | VMS                |
| CLVM     | Clarkson U ERC                   | VM/SP              |
| CLVMS    | Clarkson U ERC                   | VMS                |
| CLUTX    | Clarkson U ERC                   | UTX/32             |
| CLGW     | Clarkson U ERC                   | UNIX               |
| CLMIE    | Clarkson Univ MIE                | VMS                |
| CLEMSON  | Clemson U Comp Ctr               | MVS/SP             |
| CSUOHIO  | Cleveland State U Computer Svcs  | VM/SP              |
| UTORCLSC | CLSC                             | VMS                |
| UTORSCS1 | CLSC                             | VMS                |
| CMCHEM   | CMU Chemistry Dept               | VMS                |
| CMCCVB   | CMU Computing Services           | VMS                |
| ANDREW   | CMU Computing Services           | UNIX               |
| CGECMU51 | CMU Geneve                       | DEC VMS            |
| CMPHYSME | CMU Med Energy Physics           | VMS                |
| CMPHYS   | CMU Physics Dept                 | VMS                |
| WACES    | CMU Physics Dept                 | VMS                |
| FRCRPE51 | CNET/CRPE                        | VMS                |
| IPDCNR   | CNR - Area di Ricerca, Padiva    | DEC VMS            |
| IRMITSE  | CNR ITSE Roma, Italy             | IBM VM/SP R3       |
| FRCGM51  | CNRS - CGM                       | VAX VMS            |
| FRCECM51 | CNRS Ctr Metallurgique           | VMS                |
| FRUNIP11 | CNRS-LITP, Paris, France         | VM/SP R5           |
| FRPOLY11 | Cntr Info Ecole Polytech         | VM/SP              |
| ICNUCEVB | CNUCE - C N.R. Pisa, Italy       | IBM VM/SP HPO R4 0 |
| ICNUCEVX | CNUCE - C N.R. Pisa, Italy       | VMS 4 7            |
| FRMOP22  | CNUSC - Montpellier              | MVS/XA             |
| FRMOP11  | CNUSC Montpellier                | VM/SP              |
| FRMOP12  | CNUSC, Montpellier               | VM/SP              |
| WMMVS    | Col William and Mary Comp Ctr    | MVS/SP             |
| WMHEG    | Col William Mary Enrgy Grp       | VMS                |
| CSHLAB   | Cold Spring Harbor Lab           | VMS                |
| COLGATEU | Colgate Univ                     | VMS                |
| FRCDF51  | College de France, Paris         | DEC VMS            |



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|----------|------------------------------------------|--------------|
| CMR001   | College militaire royal                  | CP-6         |
| CODVM1   | College of DuPage Comp. Srvs             | VM/SP        |
| HLYCRSS1 | College of the Holy Cross                | VM/SP        |
| HYLCROSS | College of the Holy Cross                | VMS          |
| MINES    | Colorado Sch Mines                       | VMS          |
| CSUGREEN | Colorado State U                         |              |
| CSUGOLD  | Colorado State U                         |              |
| CSU205   | Colorado State U                         | VSOS 2.3     |
| COLOSTAT | Colorado State U                         |              |
| CUCCVX   | Columbia U Admin Dept                    | VMS          |
| CUGSBVAX | Columbia U Bus Sch Futures Ctr           | VMS          |
| CUCHEM   | Columbia U Chemistry Dept                | VMS          |
| CUCHMB   | Columbia U Chemistry Dept                | VMS          |
| CUCEVX   | Columbia U Civil Eng.                    | VMS          |
| CUCCA    | Columbia U Cluster Ctrl A                | UNIX BSD     |
| CUCSVM   | Columbia U Comp Sci                      | VM/SP        |
| CUNIXC   | Columbia U Ctr Cmptng. Act.              | ULTRIX       |
| CUVMC    | Columbia U Ctr for Comp Activities       | VM/SP        |
| CUVMA    | Columbia U Ctr for Comp Activities       | VM/SP        |
| CUVMB    | Columbia U Ctr for Comp Activities       | VM/SP        |
| CUMIN    | Columbia U Ctr for Comptng Act           | VMS          |
| CUGSBVM  | Columbia U Grad Sch Business             | VM/SP        |
| CUCCFA   | Columbia U Health Sciences               | VMS          |
| CUHSDA   | Columbia U Health Sciences               | VMS          |
| CUMBG    | Columbia U Molecular Biophy. Graph       | VMS          |
| CUORCA   | Columbia U Orthopaedic Res Clust A       | VMS          |
| CUORMB   | Columbia U Orthopaedic Res Clust A       | VMS          |
| CUORMA   | Columbia U Orthopaedic Res Micro A       | VMS          |
| CUPHYD   | Columbia U Physics Dept                  | VMS          |
| CUSB     | Columbia U Stony Brook Exp - CESR        | VMS          |
| CUTCV1   | Columbia U Teachers Coll                 | VMS          |
| CUTHRY   | Columbia U Theoretical Phys              | VMS          |
| CUCISA   | Columbia Univ Ctr for Clinical Res       | VMS          |
| UTKVX    | Computing Center                         | VMS          |
| CONU1    | Concordia U Computing Ctr                | NOS          |
| CONU2    | Concordia U Computing Ctr                | VMS          |
| CONNCOLL | Connecticut Coll                         | ULTRIX       |
| CTSTATEU | Connecticut State Univ Sys               | VMS          |
| IRMCNR   | Consig Naz Recherche - Roma              | IBM VM/SP R3 |
| DKCBS01  | Copenhagen Business School, DK           | PRIMOS       |
| DKTC11   | Copenhagen Technical College             | IBM VM/SP    |
| CRNLION  | Cornell Lab of Plasma Stud               | ULTRIX       |
| CORNELLA | Cornell U Computer Services              | VM/SP/HPO    |
| CORNELLC | Cornell U Computer Services              | VM/SP/HPO    |
| CRNLASTR | Cornell U Dept of Astronomy              | VMS          |
| CRNLCS   | Cornell U Dept of Computer Science       | UNIX BSD     |
| CRNLGSM  | Cornell U Grad Sch of Mgmt               | VMS          |
| CRNLNS   | Cornell U Lab of Nuclear Studies         | VMS          |
| CRNLIMAP | Cornell U Mech Eng                       | VM/SP        |
| CUMC     | Cornell U Medical College                | VM/SP        |
| CORNELLF | Cornell U Production Supercomp Facil     | VM/XA/SF     |
| CORNELLD | Cornell U Supercomputer Facil            | VM/SP/HPO    |
| CRNLCAM  | Cornell Univ CAM                         | UNIX BSD     |
| CRNLVAX2 | Cornell Univ Comp Servs                  | UNIX BSD     |
| CRNLVAX3 | Cornell Univ Comp Servs                  | ULTRIX       |
| CRNLVAX4 | Cornell Univ Comp Servs                  | ULTRIX       |
| CRNLVAX1 | Cornell Univ Comp Srvs                   | UNIX BSD     |
| CRNLVAX5 | Cornell Univ Comp Svcs                   | VMS          |
| CRNLMVS  | Cornell Univ Computer Srvs               | MVS/SP       |
| CRNLDEV  | Cornell Univ Ctr Theory & Simul in Sci & | EUNIX BSD    |
| CRNLCHES | Cornell Univ HESS                        | VMS          |
| CRNLASSP | Cornell Univ LASSP                       | UNIX BSD     |
| CRNLNUC  | Cornell Univ LNS                         | SUNOS UNIX   |
| CRNLMSC2 | Cornell Univ Materials Sci Ctr           | CONVEX UNIX  |
| CRNLMSC3 | Cornell Univ Materials Sci Ctr           | CONVEX UNIX  |
| CRNLEE   | Cornell Univ Sch Elec Eng                | UNIX BSD     |
| CRNLTHRY | Cornell Univ Theory Ctr.                 | UTX/32       |
| FRIHRO21 | CRIH de Haute Normandie                  | MVS          |
| FRIHVG11 | CRIH de Villeneuve St. George            | VM/SP        |
| FRCRN51  | CRN - DIHE, France                       | DEC VMS      |

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| ITOCSSIP | CSI Piemonte, Torino, Italy          | IBM MVS/SP 3 8     |
| ILCTEHOL | CTE, HOLON                           | VMS                |
| SECTHF51 | CTH Gothenburg, Sweden               | DEC VMS            |
| FRCTHO11 | CTHO, Orsay, France                  | IBM VM/SP          |
| GRPATVX1 | CTI, Computer Engineering Dept       | VMS                |
| CATE     | Ctr for Adv Tech Educ                | VM/SP              |
| BBADMIN  | CUNY - Baruch Col Admin Comp Ctr     | VM/SP              |
| BBADMIN2 | CUNY - Baruch Col Admin Comp Ctr     | VM/SP              |
| BARUCH   | CUNY - Baruch College                | VM/SP              |
| BMACADM  | CUNY - Bor of Manhattan Comm Col     | VM/SP              |
| BM002    | CUNY - Bor of Manhattan Comm Col Adm | VM/SP              |
| BX001    | CUNY - Bronx Community College       | VM/SP              |
| BKLYN    | CUNY - Brooklyn College              | VM/SP              |
| BKLYNMVS | CUNY - Brooklyn College              | MVS/SP             |
| BKLYNCIS | CUNY - Brooklyn College              | UNIX               |
| CCNY     | CUNY - City College of New York      | VM/SP              |
| CCNYVME  | CUNY - City College of New York      | VM/SP              |
| CCNYSCI  | CUNY - City College of NY            | UNIX               |
| CCNYVAX1 | CUNY - City College of NY            | VMS                |
| SI001    | CUNY - Col of Staten Island          | VM/SP              |
| CUNYVMS1 | CUNY - Graduate Center               | VMS                |
| HUNTER   | CUNY - Hunter College                | VM/SP              |
| KB001    | CUNY - Kingsborough Comm Col         | VM/SP              |
| LEHMAN   | CUNY - Lehman College                | VM/SP              |
| NY001    | CUNY - New York City Tech Col        | VM/SP              |
| QUEENS   | CUNY - Queens College                | VM/SP              |
| QB001    | CUNY - Queensborough Comm Col        | VM/SP              |
| CUNYJES3 | CUNY - University Computer Ctr       | MVS/SP             |
| YORK     | CUNY - York College                  | VM/SP              |
| CUNYVM   | CUNY University Computer Ctr         | VM/SP/HPO          |
| CUNYVMV2 | CUNY University Computer Ctr         | VM/SP/HPO          |
| HOSTOS   | CUNY University Hostos Comm. Coll    | VM/SP              |
| JJAYVM   | CUNY University John Jay. Coll       | VM/SP              |
| LAGCC    | CUNY University LaGuardia Comm. Coll | VM/SP              |
| MEDGAR   | CUNY University Medgar Evers Coll    | VM/SP              |
| MCVAX    | CWI Amsterdam                        | UNIX               |
| FRDRFG01 | D.R.F. , Grenoble, France            | PRIMOS REV 21      |
| SDNET    | Dakota State College                 | VM/SP              |
| DAL      | Dalhousie U Comp Cntr                | NOS                |
| DALAC    | Dalhousie University UCIS            | VMS                |
| DALADM   | Dalhousie University UCIS            | MVS/SP             |
| DKDHI11  | Danish Hydraulic Inst                | IBM VM/SP          |
| DKSFI11  | Danish Ntl Inst Social Res           | IBM VM/SP R3       |
| DARTCMS1 | Dartmouth College Kiewit CC - CMS1   | VM/SP              |
| DAVIDSON | Davidson Coll                        | VMS                |
| DEPAUL   | De Paul Univ                         | VMS                |
| DEPAULC  | De Paul Univ                         | VMS                |
| DEPAULO  | De Paul Univ                         | VMS                |
| DECUSA   | DECUS Symposium Demo Node            | VMS                |
| DECUSB   | DECUS Symposium Demo Node            | VMS                |
| DECUSC   | DECUS Symposium Demo Node            | VMS                |
| DECUSD   | DECUS Symposium Demo Node            | VMS                |
| DECUSE   | DECUS Symposium Demo Node            | VMS                |
| DECUSF   | DECUS Symposium Demo Node            | VMS                |
| DECUSG   | DECUS Symposium Demo Node            | VMS                |
| DECUSH   | DECUS Symposium Demo Node            | VMS                |
| DECUSI   | DECUS Symposium Demo Node            | VMS                |
| DECUSJ   | DECUS Symposium Demo Node            | VMS                |
| D00DEMO  | Demo Node Germany                    |                    |
| DENISON  | Denison Univ                         | VMS                |
| FRULM63  | Dept Math ENS Paris                  | UNIX               |
| JPNKBUDS | Dept of Systems Eng                  | VM/SP              |
| DHHDESY3 | DESY                                 | MVS/SP             |
| DFVLR0P1 | Deutsche FVLR Oberpfaffenhofen       | IBM VM/SP HPO      |
| DHDDKFZ1 | Deutsches Krebsforschungszentr       | IBM VM/SP HPO R4 2 |
| DFNGATE  | DFN Gateway at GMD DA, Germany       | IBM VM/SP R4       |
| DFVLRBS1 | DFVLR Braunschweig                   | IBM VM/SP HPO      |
| DFVLRG01 | DFVLR Goettingen                     | IBM VM/SP HPO      |
| DFVLRKP1 | DFVLR Koeln-Porz                     | IBM VM/SP HPO      |
| DFVLR1A1 | DFVLR Lampoldshausen, Germany        | IBM VM/IS          |

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| DFVLR0P2 | DFVLR Oberpfaffenhofen             | IBM MVS/XA         |
| DFVLRST1 | DFVLR Stuttgart                    | IBM VM/SP HPO      |
| DKDHI12  | DHI, Horsholm, Denmark             | IBM VM/SP          |
| DICKINSN | Dickinson College                  | VMS                |
| IFICHIM  | Dip. di Chimica Firenze, Italy     | VM/SP              |
| ITOINFO  | Dip. Informatica Torino, Italy     | UNIX 4 2           |
| IPIINFO  | Dip. Informatica Univ Pisa         | UNIX BERKELEY      |
| IRM2CIV  | Dip. Ingen. Civile Univ Roma 2     | VM/SP              |
| IPIFIDPT | Dipartimento di Fisica, Pisa       | IBM VM/SP HPO R5   |
| DB0DIW11 | DIW Berlin                         | VM/SP              |
| HLSDNL50 | DNL Leidschendam                   | VMS 4 6            |
| HLSDNL5  | DNL Leidschendam, Netherlands      | VMS 4 6            |
| HLSDNL51 | DNL Leidschendam, Netherlands      | VMS 4 6            |
| DKDOU01  | DOU, Odense, Denmark               | SPERRY OS 1100     |
| DRAKE    | Drake Univ                         | VMS                |
| DREW     | Drew Univ                          | VMS                |
| DRUNIVAC | Drew Univ                          | VMS                |
| DUPR     | Drexel Univ Off Cmptng Srvs        | PRIMOS             |
| DUVM     | Drexel University                  | VM/SP              |
| DUPHY1   | Drexel University                  | VMS                |
| DUKEFSB  | Duke U FUQUA Bus Sch               | VM/SP              |
| DUKE     | Duke University                    | MVS/SP             |
| FREMBL51 | E.M.B.L. Grenoble, France          | VMS                |
| FRERB51  | E.N.S.E.R.B., Talence, France      | DEC VMS            |
| FRENSL61 | E.N.S.L                            | UNIX BSD 4 2       |
| EBESADE0 | E.S.A.D.E. Barcelona - Spain       | AOS/VS             |
| EARNWRLD | EARN Demonstration node            | VAX/VMS            |
| ECUVM1   | East Carolina Univ Comp & Info Sys | VM/HPO             |
| ETSU     | East Tennessee St. Univ            | VM/SP              |
| ETSUACE  | East Tennessee St. Univ            | VM/SP              |
| EWCN     | East-West Center                   | VMS                |
| ECLACSV  | ECLA, Computer Center              | VM                 |
| FRECCL11 | Ecole Centrale de Lyon, France     | IBM VM/SP R4       |
| FRECP11  | Ecole Centrale de Paris            | IBM VM/SP R4       |
| FREMP11  | Ecole des Mines Paris              | VM/SP              |
| FRHEC11  | Ecole Hautes Et Commer Paris       | IBM VM/SP R4 0     |
| FRULM11  | Ecole Normale Super Paris          | IBM VM/SP          |
| FRULM52  | Ecole Normale Superieure Paris     | VMS                |
| POLYTEC1 | Ecole Polytechnique                | MUSIC              |
| POLYTEC2 | Ecole Polytechnique                | MUSIC              |
| POLYTEC3 | Ecole Polytechnique                | MUSIC              |
| POLYTECA | Ecole Polytechnique VM             | VM/SP              |
| FRESCR51 | Ecole Sup de Commerce              | DEC VMS            |
| FRESE51  | Ecole Super d'Elec                 | DEC VMS            |
| IECSEC   | ECSEC IBM Rome                     | IBM VM/SP HPO 3 4  |
| RUIPC1E  | EDS Deutschland GmbH, Germany      | IBM MVS/XA 2 1.3   |
| ECNCDC   | Edu Computing Network of IL        | NOS                |
| CIEARN   | Educat & Research, Ivory Coast     | VM/SP              |
| EDUCOM   | EDUCOM                             | VMS                |
| EDUCOM2  | EDUCOM                             | VM/SP              |
| AMBER88  | EDUCOM '88 Prime Demo              | PRIMOS             |
| EDUCOMDW | EDUCOM 88 Conf. Demo Node          | VMS                |
| EDUCOM88 | EDUCOM 88 Conf. Demo Node          | VMS                |
| AWIUNI11 | EDV Zentrum U Wien                 | IBM VM/SP HPO R4 2 |
| AWIBOK01 | EDV-Zentrum Boku Wien              | PRIMOS             |
| AWITUW02 | EDV-Zentrum TU Wien                | NOS/VE 1 3.1       |
| AWITUW01 | EDV-Zentrum TU Wien                | NOS/VE 1 3.1       |
| AINUNI01 | EDV-Zentrum Uni Innsbruck          | NOS/VE 1 3         |
| TREARN   | Ege Univ                           | VM/SP              |
| CLSEPF51 | Eid Tech Hoch Lausanne             | DEC VMS            |
| CZHETH5A | Eidgen Tech Hoch Zuerich           | VMS                |
| CAGEIR5A | EIR, Wuerenlingen, Switzerland     | VMS                |
| EPRI     | Electric Power Res Inst            | VM/SP              |
| DHHEMBL5 | EMBL Hamburg, Germany              | DEC VMS 4 6        |
| DHDEMBL  | EMBL Heidelberg, Germany           | VMS                |
| EMUVM1   | Emory U Comp Ctr - VM1             | VM/SP              |
| EMUVM2   | Emory U Comp Ctr - VM2             | VM/SP              |
| EMORYU1  | Emory U Comp Ctr UNIX1             | UNIX BSD           |
| EMORY    | Emory U Math and CS                | BERKELEY UNIX      |
| EMRYCC   | Emory Univ Comp Ctr VMS VAX        | VMS                |

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| EMORYU2  | Emory Univ Comptng Ctr                     | UNIX               |
| EMRCAN   | Energy Mines & Resources Can               | VMS                |
| HPEENR51 | ENR, Petten, Netherlands                   | VAX VMS            |
| HROEUR5  | Erasmus U Rotterdam                        | VMS 4              |
| ESOC     | ESA ESOC, Darmstadt, Germany               | IBM VM/SP HPO R5 0 |
| HNOESA10 | ESA Europ Space Res Tech Ctr               | VM/SP 4 2          |
| IFRESA10 | ESA/ESRIN Frascati, Italy                  | IBM VM/SP R4       |
| FRESA10  | ESA, France                                | IBM VM/SP R3 1     |
| DGAESO51 | ESO, Garching                              | VMS                |
| ESASTSP  | ESTEC / STSP Project                       | VM/SP HPO4 2       |
| FRESTP11 | ESTP, Paris, France                        | VM/SP              |
| CZHETH1I | ETH und Uni Zuerich IBT                    | IBM VM/SP HPO 5 0  |
| CZHETH1B | ETH Zuerich Bibliotek                      | IBM VM/SP HPO 5 0  |
| CZHETH1C | ETH Zuerich IKB                            | IBM VM/SP HPO 5 0  |
| CZHETH1A | ETHZ/IHP                                   | IBM VM/SP HPO 4 2  |
| ROSEDALE | ETS                                        | VMS                |
| DHDEMBL5 | European Molecular Biology Lab             | VMS                |
| ITSOGS   | Exp. Geophys. Observ. Trieste              | IBM VM/SP R4       |
| ERENJ    | Exxon Res & Eng Co                         | VM/SP              |
| EREVAX   | Exxon Res & Eng Co                         | VMS                |
| FRFUPL11 | F.U.P.L. de Lille, France                  | IBM VM/SP R4       |
| IFISTAT  | Fac. Econ e Comm Firenze                   | IBM VM/SP R5       |
| DAAFHT1  | Fachhochschule Aalen                       | VM/SP              |
| DHNFHS1  | Fachhochschule Heilbronn                   | IBM VM/SP R3       |
| DKAFHS1  | Fachhochschule Karlsruhe                   | IBM VM/SP R4       |
| DMAFHT1  | Fachhochschule Technik Mannheim            | IBM VM/SP R4 0     |
| DWIFH1   | Fachhochschule Wiesbaden                   | IBM VM/SP R3       |
| BNANDP11 | Facultes U Notre Dame de la Paix Namur Bel | VM/SP R5           |
| BNANDP10 | Facultes U Notre Dame Namur                | VM/SP R5           |
| IRMFAO00 | FAO                                        | IBM VM/SP R4 2     |
| DULFAW1A | FAW Ulm, Germany                           | VM/SP R4 5         |
| DS0FBD11 | FBD - Schulen Gemein GMBH                  | IBM VM/SP R3       |
| FDACFSAN | FDA, CFSAN                                 | VM/SP              |
| FNALA    | Fermi Natl Accelerator Lab                 | VMS                |
| FNALDBG  | FERMI Natl Accelerator Lab                 | VMS                |
| FNAL     | Fermilab                                   | VMS                |
| FNALB    | Fermilab                                   | VMS                |
| FNALBSN  | Fermilab                                   | VMS                |
| FNALB0   | Fermilab                                   | VMS                |
| FNALC    | Fermilab                                   | VMS                |
| FNALCDF  | Fermilab                                   | VMS                |
| FNALNET  | Fermilab                                   | VMS                |
| FNALVM   | Fermilab                                   | VM/SP              |
| FNMFE    | Fermilab                                   | VMS                |
| FNALG    | Fermilab                                   | VMS                |
| FNALJ    | Fermilab                                   | VMS                |
| FNALF    | Fermilab                                   | VMS                |
| FNAL     | Fermilab                                   | VMS                |
| FNALMDTF | Fermilab                                   | VMS                |
| FNAL01   | Fermilab                                   | VMS                |
| FNAL03   | Fermilab                                   | VMS                |
| FNAL05   | Fermilab                                   | VMS                |
| FNAL17   | Fermilab                                   | VMS                |
| FNAL26   | Fermilab                                   | VMS                |
| FNAL27   | Fermilab                                   | VMS                |
| FNACP    | Fermilab                                   | VMS                |
| FNBIT    | Fermilab                                   | VMS                |
| FNALH    | Fermilab                                   | VMS                |
| FNALI    | Fermilab                                   | VMS                |
| FNALK    | Fermilab                                   | VMS                |
| FNCCF    | Fermilab                                   | VM                 |
| FNALAD   | FERMILAB Ntl Lab                           | VMS                |
| DHAFEU51 | Fern-Uni Hagen (Informatik)                | VMS                |
| DHAFEU61 | Fern-Uni Hagen (Informatik)                | UNIX BSD           |
| DHAFEU11 | Fernuniversitaet Hagen                     | IBM VM/SP R4       |
| DHAFEU52 | Feruniversitaet Hagen                      | DEC VMS 4 7        |
| FINFUN   | Finnish S Comp Ctr Espoo                   | DEC VMS 4 1        |
| TRFIRAT  | Firat Univ                                 | VM/SP R 3          |
| FSUSFS   | Fl St U Spr-comp Frnt-end Sys              | NOS                |
| FSURAI   | FL State U Rsrch Instrtnl Sys              | NOS                |

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|----------|--------------------------------------------|-----------------------|
| FSUSUP   | FL State U Super Comp Sys                  | VSOS                  |
| NERVM    | Florida NE Reg Data Ctr                    | VM/SP                 |
| NER      | Florida NE Reg Data Ctr                    | MVS/XA                |
| FSU      | Florida State U                            | VM/SP                 |
| BEARN2   | FNRS/NFWO, Brussels, Belgium               | VM/SP                 |
| FORDMULC | Fordham Univ                               | VMS                   |
| FORDMURH | Fordham Univ                               | VMS                   |
| FANDM    | Franklin and Marshall Coll                 | VMS                   |
| FANDMA   | Franklin and Marshall Coll                 | VMS                   |
| FANDMB   | Franklin and Marshall Coll                 | VMS                   |
| FANDMC   | Franklin and Marshall Coll                 | VMS                   |
| FHCRCVM  | Fred Hutchinson Cancer Res Ctr             | VM/SP                 |
| FHCRCVAX | Fred Hutchinson Cancer Res Ctr Div Clin Re | VMS                   |
| DB0DSS81 | Freie Universitaet Berlin                  | SIEMENS BS2000        |
| DB0FHI01 | Fritz Haber Institut der Max Planck Gesell | CDC NOS/BE 1 5        |
| FIPORT   | FSCC, Espoo, Finland                       | DEC VMS               |
| DB0FUB03 | FU Berlin ZEDAT CDC                        | CDC NOS/BE 1 5        |
| DB0FUB11 | FU Berlin ZEDAT CDC, Germany               | IBM VM/SP             |
| GALLUA   | Gallaudet Univ Comp Svcs                   | VMS                   |
| GALLUB   | Gallaudet Univ Comp Svcs                   | VMS                   |
| GALLUE   | Gallaudet Univ Comp Svcs                   | VMS                   |
| FRGAN01  | GANIL, Caen, France                        | MAX32 REV A 1         |
| GECDVM1  | GE R&D                                     | VM/SP                 |
| CGEHCU61 | Geneva Hospital, Switzerland               | UNIX                  |
| GMOVAX   | George Mason U                             | VMS                   |
| GWUVM    | George Washington U Comp Ctr               | VM/SP                 |
| GUVV     | Georgetown U Acad CMS                      | VM/SP                 |
| GUVAX    | Georgetown U Acad VAX                      | VMS                   |
| GSUMVS1  | Georgia State U - MVS1                     | MVS/XA                |
| GSUVM1   | Georgia State U - VM1                      | VM/SP                 |
| GSUVM2   | Georgia State Univ CC VM2                  | VM/SP                 |
| GITVM2   | Georgia Tech CAE/CAD Lab                   | VM/SP                 |
| GITCDC1  | Georgia Tech Comp Svcs                     | NOS                   |
| GITCDC2  | Georgia Tech Comp Svcs                     | NOS                   |
| GITNVE2  | Georgia Tech Comp Svcs                     | NOS/VE                |
| GITATT1  | Georgia Tech Computing Svcs                | UNIX SYSTEM V         |
| GITVM1   | Georgia Tech Computing Svcs                | VM/SP/HPO             |
| GTRI01   | Georgia Tech Research Inst.                | VM/SP                 |
| DBNGMD21 | Ges. Mathematik Datenv Bonn                | MVS/SP                |
| DDAGMD11 | Ges. Mathematik Datenv Darmstadt           | IBM VM/SP R4          |
| DEARN    | Gesellschaft fuer Schwerionenf             | IBM VM/SP R5          |
| DDAGSI3  | Gesellschaft fuer Schwerionfor             | IBM MVS/XA 2 1.3 VFE  |
| FRGETA11 | GETA                                       | VM/SP                 |
| GBURG    | Gettysburg Coll                            | VMS                   |
| DGHGKSS4 | GKSS, Geesthacht, Ger                      | SIEMENS BS3000 E 40   |
| DBNGMD12 | GMD Bonn, Germany                          | IBM VM/SP R5          |
| SEGUC11  | Gothenburg U Comp Ctr                      | IBM VM/SP R2          |
| SEGUC21  | Gothenburg U Comp Ctr                      | IBM MVS/SP 1 3.3      |
| UKACRL   | Great Britain EARN London                  | IBM VM/SP R3          |
| FRPROG61 | GRECO Programmation Bordeaux               | UNIX                  |
| GRIN2    | Grinnell College - Admin                   | VMS                   |
| GRIN1    | Grinnell College Academic                  | VMS                   |
| FRGAG51  | Groupe Astrophysique Grenoble              | VMS                   |
| DGAGRS2A | GRS Garching                               | IBM MVS/XA            |
| DK0GRS11 | GRS Koein                                  | VM/SP                 |
| DM0GSF11 | GSF Muenchen                               | VM/SP                 |
| DM0GSF51 | GSF-MEDIS                                  | VMS                   |
| DDAGSI5  | GSI Darmstadt VAX                          | DEC VMS 4 3           |
| DDAGSI1  | GSI Darmstadt, Germany                     | IBM VM/SP R4 0        |
| DDAGSI10 | GSI Darmstadt, Germany                     | IBM VM/SP R4 0        |
| GACVAX1  | Gustavus Adolphus Coll                     | VMS                   |
| DGOGWDG1 | GWD Goettingen, Germany                    | IBM VM/SP R4          |
| DGOGWDG5 | GWD Goettingen, Germany                    | DEC VMS               |
| GWUVAX   | GWU - School of Eng.                       | VMS                   |
| SEASVM   | GWU - School of Eng. IBM                   | VM/SP                 |
| HADASSAH | Hadassah U Hospital                        | DEC VMS               |
| DB0HMI41 | Hahn-Meitner-Institut Kerforschung         | SIEMENS BS3000 MSP 10 |
| HAIFAUVM | Haifa University                           | IBM VM/SP R4 1        |
| HAMPVMS  | Hampshire College                          | VMS                   |
| KRHYUCC1 | Hanyang Univ                               | VMS                   |

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|----------|----------------------------------------|--------------|
| HUSC5    | Harvard HASCS                          | VMS          |
| HUSC2    | Harvard HASCS                          | BSD UNIX 2.9 |
| HUARP1   | Harvard U Atmos Res Project            | VMS          |
| HARVBMB  | Harvard U Biochem & Molec Bio          | UNIX BBN     |
| HARVJMMY | Harvard U Biostat Res Cmptng           | ULTRIX       |
| HARVBUS1 | Harvard U Bus Sch                      | VM/SP        |
| HUCHE1   | Harvard U Chemistry VAX1               | VMS          |
| HARVARD  | Harvard U Computer Science             | UNIX BSD     |
| CFA2     | Harvard U Ctr Astrophysics             | VMS          |
| CFA3     | Harvard U Ctr Astrophysics             | VMS          |
| CFA      | Harvard U Ctr Astrophysics             | VMS          |
| CFAAMP   | Harvard U Ctr Astrophysics             | VM/SP        |
| CFA4     | Harvard U Ctr Astrophysics             | VMS          |
| CFA5     | Harvard U Ctr Astrophysics             | VMS          |
| CFA6     | Harvard U Ctr Astrophysics             | VMS          |
| CFA7     | Harvard U Ctr Astrophysics             | VMS          |
| CFA8     | Harvard U Ctr Astrophysics             | VMS          |
| CFAPS2   | Harvard U Ctr Astrophysics             | VMS          |
| HARVPCNA | Harvard U Faculty Arts & Sciences      | MS-DOS       |
| HUGSE1   | Harvard U Grad Sch of Ed               | VMS          |
| HARVHEP  | Harvard U High En Physics Lab          | VMS          |
| HUHEPL   | Harvard U High Energy Physics          | VMS          |
| HUXTAL   | Harvard U Mole Bio Cmptng.             | VMS          |
| HARVARDA | Harvard U OIT                          | VM/SP        |
| HUSSLE   | Harvard U Physics Dept                 | VMS          |
| HARVUNXW | Harvard U Psychology Dept              | UNIX BSD     |
| HARVUNXC | Harvard U Psychology Dept              | UNIX         |
| HARVUNXU | Harvard U Science Center               | UNIX BSD     |
| HUSC6    | Harvard U Science Ctr                  | UNIX         |
| HULAW1   | Harvard U Science Ctr                  | VMS          |
| HUSC3    | Harvard U Science Ctr                  | VMS          |
| HUMA1    | Harvard U Science Ctr                  | UNIX BSD     |
| HUSC7    | Harvard U Science Ctr                  | ULTRIX       |
| HUSC8    | Harvard U Science Ctr                  | ULTRIX       |
| HUSCGW   | Harvard U Science Ctr BITNET Mail Gtwy | VMS          |
| HARVUNXT | Harvard U Sociology Dept               | UNIX BSD     |
| HARVSPHA | Harvard Univ Health Sci. Cmptng. Fac.  | ULTRIX       |
| HARVSPHB | Harvard Univ Health Sci. Cmptng. Fac.  | ULTRIX       |
| FOURCC   | Harvey Mudd Col Comp Services          | VMS          |
| HMCVAX   | Harvey Mudd Col Comp Srvs              | VMS          |
| ECHMC    | Harvey Mudd Col Eng Dept               | VMS          |
| FROSH    | Harvey Mudd Col Eng Dept               | VMS          |
| YMIR     | Harvey Mudd Col Math Dept              | VMS          |
| HECMTL01 | Hautes Etudes Commerciales             |              |
| HVRFORD  | Haverford Col Acad Comp Ctr            | VMS          |
| DKHHA    | HDC Aarhus                             | VMS          |
| HUJINIX  | Hebrew U Comp Cnt Unix                 | UNIX BSD 4 2 |
| HBUNOS   | Hebrew U Comp Ctr                      | NOS          |
| HUJIVMS  | Hebrew U Comp Ctr                      | DEC VMS      |
| HUJICS   | Hebrew U Computer Sci                  | UTX 32       |
| HUJIAGRI | Hebrew U Faculty of Agriculture        | DEC VMS      |
| HUJIFH   | Hebrew U Fritz Haber Molec Dyna Ctr    | UNIX BSD 4 2 |
| HUMUS    | Hebrew U Jerusalem Comp Sc             | UNIX BSD 4 2 |
| HUJINOS2 | Hebrew U Jerusalem, Israel             | NOS          |
| HUJIMD   | Hebrew U Medical School                | DEC VMS      |
| BATATA   | Hebrew U Molecular Ctr                 | UNIX BSD 4 2 |
| HUJIPRMA | Hebrew U Mount Scopus Comp Ctr         | PRIMOS       |
| HUJIPRMB | Hebrew U Mount Scopus Comp Ctr         | PRIMOS       |
| HUJIVM1  | Hebrew University                      | VM/CMS       |
| FINGATE  | Helsinki U Tech                        | UNIX         |
| FINHUTA  | Helsinki U Tech                        | IBM VM/SP R4 |
| FINHUTC  | Helsinki U Tech Finland                | IBM VM/SP R4 |
| FINHUT   | Helsinki Univ of Tech                  | IBM VM/SP R5 |
| FINHUTCS | Helsinki University of Techn           | UNIX 4 3 BSD |
| FINHUTEE | Helsinki University of Techn           | UNIX 4 3 BSD |
| FINHUTIT | Helsinki University of Techn           | UNIX 4 3 BSD |
| JPNHIROA | Hiroshima Univ                         | VM/HPO       |
| DDATHD21 | Hoch TH Darmstadt                      | MVS/SP       |
| DDOHRZ11 | Hoch U Dortmund                        | IBM VM/SP R3 |
| DHDIHEP5 | Hochenergiephysik                      | VMS          |

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|----------|---------------------------------------|--------------------|
| DHIURZ1  | Hochschule Hildesheim Germany         | IBM VM/SP R4       |
| HOFSTRA  | Hofstra Univ                          | VMS                |
| HUMAIN   | Howard Univ Central Comp              | MVS                |
| HSETC    | HSETC                                 | VM/SP HPO          |
| HUJIDS   | HUJI Dental School                    | DEC MICROVMS       |
| HUMBER   | Humber College                        | VM/SP              |
| IRMIAS   | I Astrofisica Spaziale                | VM/SP              |
| IFIIDG   | I Document Giurid Firenze             | VM/SP              |
| ITOIMGC  | I Meteorologia Colonnetti             | VM/SP              |
| IRMCRA   | I Recherche Aerospaziali              | IBM VM/SP          |
| IPVIAN   | I.A.N.-CNR, Pava, Italy               | VM/SP              |
| IGEICE   | I.C.E.-CNR, Genova, Italy             | CDC NOS 2 4.2      |
| FRILL52  | I.L.L. , Grenoble, France             | DEC VMS            |
| FRILL    | I.L.L. , Grenoble, France             | DEC VMS            |
| FRIMFT11 | I.M.F.                                | VM/SP              |
| FRURBB51 | I.N.S.E.R.M.                          | DEC VMS            |
| FROPT11  | I.O.T.A                               | IBM VM/IS          |
| TRITU    | I.T.U                                 | VM/SP R3           |
| FRPGM11  | I.U.T. Progem                         | VM/SP              |
| AWIIAE21 | IAEA                                  | IBM MVS/XA 2 1.3   |
| IRMIASI  | IASI CNR Roma, Italy                  | DEC VMS V4 5       |
| ALMCSVM1 | IBM Almaden Res Ctr                   | VM/SP              |
| ALMCSVM2 | IBM Almaden Res Ctr                   | VM/SP              |
| ALMCSVM6 | IBM Almaden Res Ctr                   | VM/SP              |
| ALMCSVS5 | IBM Almaden Res Ctr                   | VM/SP              |
| ALMVMA   | IBM Almaden Res Ctr                   | VM/SP              |
| ALMVMB   | IBM Almaden Res Ctr                   | VM/SP              |
| ALMVMC   | IBM Almaden Res Ctr                   | VM/SP              |
| ALMVMZ   | IBM Almaden Res Ctr                   | VM/SP              |
| IBMLABNN | IBM Canada Labs                       |                    |
| ISRAEARN | IBM Israel SC - Haifa                 | IBM VM/SP R3       |
| DS0LILOG | IBM LILOG Project Stuttgart           | IBM VM/SP R3       |
| ZURLVM1  | IBM Research Lab Zurich               | IBM VM/SP          |
| EMDCCI11 | IBM Scientific Center Madrid          | IBM VM/SP R4       |
| JPNTSCVM | IBM Tokyo Research                    | VM/SP              |
| VNET     | IBM VNET Gateway                      | VM/SP              |
| YKTVMV   | IBM Watson Sci Res Ctr                | VM/SP              |
| WATSON   | IBM Watson Sci Res Ctr                | VM/SP              |
| YKTVMT   | IBM Watson Sci Res Ctr                | VM/SP              |
| YKTVMH   | IBM Watson Sci Res Ctr                | VM/SP              |
| YKTVMX   | IBM Watson Sci Res Ctr                | VM/SP              |
| YKTVMZ   | IBM Watson Sci Res Ctr                | VM/SP              |
| TJWATSON | IBM Watson Sci Res Ctr                | VM/SP              |
| YKTVMH2  | IBM Watson Sci Res Ctr Yorktn         | VM/SP              |
| DHDIBM1  | IBM Wissenschaftliches Zentrum        | VM/SP              |
| DHDIBM1W | IBM WZH & ENC Heidelberg              | VM/SP              |
| FRIBCP51 | IBMC, Strasbourg, France              | DEC VMS            |
| DKIBT    | IBT                                   | IBM VM/IS VER 1 5  |
| SELIUI51 | IDA Linkoping, Sweden                 | DEC VMS            |
| SELIUIDA | IDA Linkoping, Sweden                 | DEC VMS            |
| BBRIBM11 | IEC, La Hulpe, Belgium                | VM/SP HPO R4 2     |
| AWIIEZ11 | IEZ Numerischer Rechner, Wien         | IBM VM/SP R4       |
| DHVIFW1  | IFW, Univ Hannover, Germany           | IBM VM/SP R5       |
| IITVAX   | Illinois Inst Tech/ACC                | VMS                |
| FRINA11  | INA-PG                                | IBM VM/IS          |
| INDST    | Indiana State Univ                    | VM/SP              |
| IUBACS   | Indiana U Bloomington ACS             | VMS                |
| IUP      | Indiana U of Penn                     | HONEYWELL CP-6 C00 |
| IUBVM    | Indiana Univ Bloomington VM           | VM/XA SF RELEASE 2 |
| IUCF     | Indiana Univ Cyclotron Facil          | VMS                |
| IUBUS    | Indiana Univ Sch of Business          | VM/SP              |
| INSTEPS  | Indiana Univ Stwde Teah Elec Prod Sys | VM/SP              |
| INDYVAX  | Indiana/Purdue U                      | VMS                |
| INDYCMS  | Indiana/Purdue U                      | VM/SP              |
| INDYMED  | Indiana/Purdue U                      | VM/SP              |
| IUIS     | Indiana/Purdue U                      | MVS/XA             |
| FRINED51 | INED                                  | DEC VMS            |
| IRMEMU   | INFN - EMU, Roma, Italy               | IBM VM/SP R4       |
| IPIVAXIN | INFN - Pisa                           | DEC VMS            |
| IPIINFN  | INFN Pisa                             | IBM VM/SP R4       |

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| IRMLNF   | INFN/LNF                                    | DEC VMS 4 4        |
| ITIVAX   | Information Technology Inst                 | VMS                |
| ILNPL    | INPL, Israel                                | DEC VMS            |
| FRINRA11 | INRA - CTIG                                 | IBM VM/SP R4       |
| FRINRA72 | INRA - CTIS                                 | BULL MULTICS       |
| FRIRTS71 | INRETS                                      | BULL MULTICS       |
| FREIBA51 | INSEAD                                      | DEC VMS            |
| FRCCRM51 | INSERM, Villejuif, France                   | DEC VMS            |
| FRIAP51  | Inst d'Astrophysique Paris                  | VMS                |
| PTIFM    | Inst de Fisica e Matematica                 | DEC VMS            |
| IMISIAM  | Inst Fisica Cosmica Milano                  | VM/SP              |
| IASSNS   | Inst for Advan Study                        | VMS                |
| IASSUN   | Inst for Advan Study                        | UNIX BSD           |
| DBNMEB1  | Inst fuer Med Statistik / Med Einrichtungen | IBM VM/SP R5       |
| AWIIMC11 | Inst Med Computwiss Uni Wien                | IBM VM/SP HPO R4 2 |
| IRMISS   | Institut Superiore di Sanita                | VM/SP              |
| EBRIEC01 | Institut d'Estudis Catalans                 | 38 CPF             |
| DHDIHEP1 | Institut fuer Hochenergiephysi              | IBM VM/SP R4       |
| FRILL51  | Institut Laue-Langevin                      | VMS                |
| FRPSTR01 | Institut Pasteur                            | AOS/VS             |
| FRINT51  | INT                                         | VMS                |
| FRCPN11  | IN2P3 Ctr de Calcul                         | VM/SP              |
| IONAACAD | Iona College Comp Ctr                       | VM/SP              |
| IONA     | Iona College Music Sys                      | VM/SP              |
| ALISUVAX | Iowa S U Ames Lab Dept Energy               | VMS                |
| ISUMVS   | Iowa State U Comp Ctr                       | MVS/SP             |
| ISUCARD  | Iowa State U Ctr. Agricul. & Rural Dev      | VM/SP              |
| ISUEVAX  | Iowa State U Eng. VAX Cluster               | VMS                |
| ISUVAX   | Iowa State VAX Cluster                      | VMS                |
| DMZNAT51 | IPH KCH KPH Uni Mainz, Germany              | DEC VMS 4 6        |
| DGAIPP5N | IPP (MPI f. Plasmaphysik)                   | VMS                |
| IRIS     | IRIS                                        | UNIX               |
| IRUCCVAX | IRUCCVAX                                    | VMS                |
| FRISIO11 | ISIO - MIAGE                                | VM/IS              |
| IRMISRDS | ISRDS CNR Roma, Italy                       | IBM VM/SP R5       |
| TRIUVM11 | Istanbul Univ                               | IBM VM/SP R3       |
| ITHACA   | Ithaca College                              | VMS                |
| ICUNIX   | Ithaca College                              | ULTRIX             |
| FRIUTO11 | IUT Orsay                                   | IBM VM             |
| JAXLAB   | Jackson Lab                                 | UNIX BSD           |
| JMUVAX1  | James Madison Univ VAX1                     | VMS                |
| JPNJAERI | Japan Atomic Energy Res Inst                | VM/SP              |
| JCSVAX1  | Jersey City St Co                           | VMS                |
| ILJCT    | Jerusalem Col Tech                          | DEC VMS            |
| JHUNIX   | JHU HCF                                     | UNIX               |
| JHUV     | JHU HCF                                     | VM/SP              |
| JHUVMS   | JHU HCF                                     | VMS                |
| JHHMVS   | JHU HCF                                     | MVS/XA             |
| JHHVM    | JHU Hosp Info Sys Dept                      | VM/SP              |
| JHUHYG2  | JHU School of Public Health                 | ULTRIX             |
| JNETDEMO | JNETDEMO, RAI, Netherlands                  | VMS 4 6            |
| ALIJKU21 | Johannes Kepler U Linz                      | IBM MVS/SP 1 3.8   |
| JCUVAX   | John Carroll Univ                           | VMS                |
| JCVAXA   | John Carroll Univ                           | VMS                |
| JVNCC    | John Von Neumann Ctr                        | VMS                |
| JVNCD    | John Von Neumann Ctr                        | VMS                |
| JVNC     | John Von Neumann Ctr                        | VMS                |
| JHUHYG   | Johns Hopkins U                             | VM/SP              |
| JHUP     | Johns Hopkins U High En Phys                | VMS                |
| JHUIGF   | Johns Hopkins Univ - IGF                    | VMS                |
| APLVM    | Johns Hopkins Univ App Phys Lab             | VM/SP              |
| JILA     | Joint Inst for Lab Astrophysics             | VMS                |
| FINJYU   | Jyvaskyla Univ, Finland                     | DEC VMS 4 4        |
| JPNKIT   | Kanazawa Inst. of Tech.                     | VM/SP              |
| KSUUVAX1 | Kansas St U Comp Sci Dept                   | UNIX BSD           |
| KSUVM    | Kansas State U CC                           | VM/SP              |
| HRDKSW5  | Kapteijn Sterrenwacht Roden                 | VMS 4 3            |
| BLEKUL11 | Kath U Leuven                               | VM/SP R4           |
| BLEKUL60 | Kath Univ Leuven                            | UNIX               |
| BLEKUL21 | Kath. Univ Leuven, Belgium                  | MVS/XA 2 2.0       |



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| BLEKUL12 | Kath. Univ Leuven, Belgium         | VM/SP R4           |
| BLEKUL10 | Katholieke U Leuven Mech Eng       | VM/SP R3 1         |
| HNKUN55  | Katholieke U Nijmegen              | VMS                |
| HEARN    | Katholieke U Nijmegen              | VM/SP R5           |
| HNKUN11  | Katholieke U Nijmegen              | VM/SP HPO 4 2      |
| HNKUN22  | Katholieke U Nijmegen              | MVS/SP 1 3 -TSO/E- |
| HNKUN51  | Katholieke U Nijmegen              | VMS                |
| HNKUN53  | Katholieke U Nijmegen              | VMS 4 1            |
| HTIKUB5  | Katholieke Uni Brabant             | VMS 4              |
| HNKUN52  | Katholieke Universiteit Nijmegen   | VMS                |
| JPNKEIO  | Keio Univ                          | OS IV/F4 MSP       |
| JPNKEKVX | KEK Network                        | VMS                |
| JPNKEKTR | KEK TRISTAN                        | OS IV/F4 MSP       |
| KENTASHT | Kent S U Ashtabula                 | VMS                |
| KENTELIV | Kent S U East Liverpool            | VMS                |
| KENTGEAU | Kent S U Geauga                    | VMS                |
| KENTVM   | Kent S U Info Services             | VM/SP              |
| KENTVMS  | Kent S U Info Services             | VMS                |
| KENTGOLD | Kent S U Info Services             | VMS                |
| KENTSALM | Kent S U Salem                     | VMS                |
| KENTSTAR | Kent S U Stark                     | VMS                |
| KENTTRUM | Kent S U Trumbull                  | VMS                |
| KENTTUSC | Kent S U Tuscarawas Campus         | VMS                |
| DJUKFA11 | Kernforsch Juelich                 | IBM VM/SP HPO R4 2 |
| DJUKFA21 | Kernforsch Juelich                 | IBM MVS/XA         |
| DKAKFK3  | Kernforsch Karlsruhe               | MVS/SP             |
| DJUKFA53 | Kernforschungsanlage Juelich G     | VMS                |
| HGRRUG51 | Kernfysisch Versn Inst             | VMS 4 2            |
| DJUKFA54 | KFA Juelich - IFF                  | VMS                |
| DJUKFA52 | KFA Juelich - IPP                  | VMS                |
| DKAKFK11 | KFK Karlsruhe                      | IBM VM/SP          |
| DB0ZIB21 | Konrad Zuse Zentrum Infor          | IBM MVS/SP 1 3.4   |
| JPNKEKVM | Kou Enerugi Ken, Tsukuba Japan     | VM/SP              |
| SEKTH    | KTH                                | UNIX BSD4 3        |
| BLEKUL13 | KUL CME                            | VM/SP R3           |
| JPNKUHEL | Kyoto U HEPL                       | OS IV/F4 MSP       |
| JPNKUDPC | Kyoto Univ                         | OS IV.F4 MSP       |
| JPNKYOTO | Kyoto Univ Dept Info Sci           | VM/SP              |
| JPNKISCT | Kyushu Institute of Tech           | VM/HPO             |
| JPNKISCI | Kyushu Institute of Tech - Iizuka  | VM/HPO             |
| JPNCKKU  | Kyushu Univ                        | OSR/F4 MSP         |
| FRSOL11  | L.P.S.O., Orsay, France            | IBM VM/SP          |
| FRLAAS61 | LAAS Toulouse France               | UNIX               |
| LNCC     | Lab Nat'l Comp Cientificia         | VM/SP              |
| FRUPS51  | Lab physique des solides           | VAX VMS            |
| FRPOLY52 | Labo Physique Nucl Haute Eng       | VMS                |
| LAFAYETT | Lafayette College                  | UNIX               |
| LAKEHEAD | Lakehead U                         | UNIX               |
| LUSUN    | Lakehead U                         | SUN UNIX           |
| LUVMS    | Lakehead U                         | MICROVMS 4 5       |
| FRLAL51  | LAL, Orsay, France                 | DEC VMS 4 5        |
| HWALHW5  | Landbouwhogeschool Wageningen      | VMS 4 3            |
| HWALHW50 | Landbouwuniv Wageningen            | VMS 4 3            |
| FRLAPP51 | LAPP, Annecy, France               | DEC VMS            |
| FRLASM51 | LAS Marseille France               | DEC VMS            |
| FRLASH51 | LASH-ENTPE                         | DEC VMS            |
| LAUVAX01 | Laurentian University              | VMS                |
| LAUCOSC  | Laurentian University              | VMS                |
| LAUADMIN | Laurentian University              | VMS                |
| LAVALVM1 | Laval U                            | VM/SP              |
| LAWRENCE | Lawrence Univ                      | VMS                |
| SELDC51  | LDC Lund, Sweden                   | DEC VMS            |
| SELDC52  | LDC Lund, Sweden                   | DEC VMS            |
| LEMOYNE  | Le Moyne College                   | VMS                |
| LEHICDC1 | Lehigh Univ CC - Cyber 850         | NOS                |
| LEHICIM1 | Lehigh Univ CIM Lab VM1            | VM/SP              |
| LEHIIBM1 | Lehigh Univ Comp Ctr - IBM4381     | VM/SP              |
| LEHIGH   | Lehigh Univ Comp Ctr - Ntwk Server | MUSIC/SP           |
| LCVAX    | Lehman Col Acad Comp Ctr           | VMS                |
| DM0LRZ01 | Leibniz Rechenzentrum Muenchen     | CDC NOS 2 5        |

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| LCLARK    | Lewis & Clark College                 | BERKELEY UNIX 4.3 |
| SELIUC51  | LIDAC Linkoping, Sweden               | DEC VMS           |
| DHHLILOG  | LILOG-R, Uni Hamburg, Germany         | IBM VM/SP R4      |
| FRLIM51   | LIMSI-CNRS, Orsay, France             | DEC VMS           |
| FRLMCP61  | LMCP                                  | SUNOS 3 4         |
| FRFLU51   | LMFA                                  | DEC VMS           |
| LIUVAX    | Long Island Univ                      | VMS               |
| LAMPF     | Los Alamos Nat'l Lab                  | VMS               |
| LSUENG    | Louisiana St U Coll Eng               | NOS               |
| LSUMVS    | Louisiana St U Comp Ctr               | MVS/SP            |
| LSUVM     | Louisiana St U Comp Ctr               | VM/SP             |
| LSUVAX    | Louisiana St U Comp Ctr               | VMS               |
| LSUCHE    | Louisiana State Univ Chem Eng VM      | VM/SP             |
| LOYVAX    | Loyola College, MD                    | VMS               |
| LUCCPUA   | Loyola U of Chicago                   | MVS/SP            |
| FRLRI61   | LRI-Orsay                             | SUN OS 3 4        |
| NNOMED    | LSU Med Ctr - New Orleans             | MVS/XA            |
| NSHMED    | LSU Med Ctr - Shreveport              | MVS/XA            |
| BDILUC11  | LUC, Diepenbeek                       | VM/SP             |
| IRMLUISS  | LUISS Roma                            | IBM VM/SP R3 1    |
| FRLURE51  | LURE                                  | VMS               |
| LBL       | Lwrce Berkly Lab Comp Serv            | VMS               |
| LEPICS    | L3, CERN, Geneva, Switzerland         | IBM VM/SP HPO 4 2 |
| FRMNH11   | M.N.H.M                               | IBM VM-IS         |
| MACALSTR  | Macalester College                    | VMS               |
| MCCVM1    | Macomb Comm Co                        | VM/SP             |
| FARMNTON  | Maine - Farmington Comp Ctr           | VM/SP             |
| MANVAX    | Manhattan Coll                        | VMS               |
| MARICOPA  | Maricopa Cty Comm Coll Dist           | VMS               |
| MARIST    | Marist Col                            | VM/SP             |
| MARISTC   | Marist Col                            | MUSIC             |
| MARISTA   | Marist Col                            | MUSIC             |
| MARISTB   | Marist Col                            | MUSIC             |
| MARFSHVM  | Marist Col                            | VM/SP             |
| MARISTF   | Marist Col                            | MUSIC             |
| MARMVS    | Marist Col                            | MVS/XA            |
| MARVMXA   | Marist Col                            | VM/XA/SP          |
| MUCSD     | Marquette Univ                        | VMS               |
| MUVMS1    | Marshall U Comp Ctr                   | VMS               |
| MITFBNML  | Mass Inst of Tech FB Nat'l Magnet Lab | VMS               |
| MITVMA    | Mass Inst of Tech Info Sys            | VM/SP             |
| MITRLEVM  | Mass Inst of Tech Res Lab Elec        | VM/SP             |
| MITLNS    | Mass Inst of Tech.                    | VMS               |
| SLOAN     | Mass Inst Tech Sloan Sch of Mgmt      | VM/SP             |
| DKOUMI1   | Mathem Institut Univ Koein            | IBM VM/SP R4      |
| DM0MPI11  | Max Planck I Physik Astrophysi        | IBM VM/SP R4 1    |
| DGAMPE5D  | Max Planck Inst Extraterr Physik      | VMS               |
| HNYPMI51  | Max Planck Inst Nijmegen              | VMS               |
| DM0MPF11  | Max Planck Inst Psych Forsch          | IBM VM/SP R3 1    |
| HNYPMI52  | Max Planck Inst., Nijmegen, NL        | VMS 4 3           |
| DGAIPP1S  | Max-Planck-Institut fuer Plasm        | IBM VM/SP R5      |
| MCGILLB   | McGill U                              | MUSIC             |
| MCGILLC   | McGill U                              | MUSIC             |
| MCGILLA   | McGill U Comp Centre                  | MUSIC             |
| MCGILL2   | McGill U Comp Centre                  | VM/HPO            |
| MCGILL1   | McGill U Comp Ctr                     | VM/SP             |
| MCGILLM   | McGill U MUSIC Prod Group             | MUSIC             |
| MCGILL3   | McGill U MUSIC Prod Group             | VM/SP             |
| MCGILLVS  | McGill Univ CC                        | MVS/SP            |
| MUSOCS    | McGill Univ Comp Sci                  | UNIX              |
| MCMMASTER | McMaster U CIS                        | VMS               |
| MCMVM1    | McMaster U Inf Proc Svcs              | VM                |
| TANDEM    | McMaster Univ                         | VMS               |
| MCOIARC   | Med Col Ohio Img Anal Res Ctr         | VMS               |
| MUSC      | Med U S Carolina - csx/irm            | VMS               |
| MCO       | Medical College of Ohio               | VM/SP             |
| MEDCOLWI  | Medical College of Wisconsin          | VMS               |
| MUN       | Memorial U. of NF                     | VMS               |
| MERIT     | Merit Comp Net                        | VM/SP             |
| MIAMIU    | Miami U Academic Comp Service         | VM/SP             |

|          |                                           |                  |
|----------|-------------------------------------------|------------------|
| MIAVX2   | Miami Univ Hamilton Campus VAX            | VMS              |
| MIAVX3   | Miami Univ Middletown Campus VAX          | VMS              |
| MIAVX1   | Miami Univ Oxford Campus VAX              | VMS              |
| MSU      | Mich State Univ. Computer Lab             | VM/SP            |
| MSUEGR   | Mich State Univ. Engineering              | VMS              |
| MTUVAXC  | Michigan Tech Univ Comp Sci Res VAX       | UNIX             |
| MTUVAXB  | Michigan Tech Univ Computer Sci           | UNIX             |
| MTUVAXA  | Michigan Tech Univ Ctr for Exper Comp     | VMS              |
| MTUS5    | Michigan Tech Univ Sys 5                  | VM/SP/HPO        |
| TRMETU   | Middle East Tech Uni Ankara               | MCP              |
| MIDD     | Middlebury College                        | VMS              |
| MILLERSV | Millersville Univ of PA                   | VM               |
| TWNMOE10 | Ministry of Ed Taiwan                     | VM/SP HPO        |
| TWNMOE20 | Ministry of Ed Taiwan                     | VM/SP            |
| MSSTATE  | Mississippi State Univ CC 1100            | OS1100           |
| MITWCCF  | MIT - Whitaker College Health Sci, Tech & | VMSt             |
| MITVMC   | MIT Admin VM/CMS                          | VM/SP/HPO        |
| MITVMD   | MIT Admin VM/CMS                          | VM/SP            |
| MITVBUD  | MIT Budget, Actng, & Sponso Programs      | VMS              |
| MITWIBR  | MIT Whitehead Instit for Biomed Res       | VMS              |
| MITBATES | MIT Wm. Bates Linear Accel Lab            | VMS              |
| MTSUNIX1 | Montana State Univ                        | ULTRIX           |
| TECMTYVM | Monterrey Inst of Tech                    | VM/SP            |
| TECMTYSB | Monterrey Inst of Tech                    | VM/SP            |
| VMTECMEX | Monterrey Instit of Tech                  | VM/SP            |
| VMTECQRO | Monterrey Instit of Tech Queretaro        | VM/SP            |
| MONTCOLA | Montgomery Coll                           | VM/SP            |
| MONTCOLB | Montgomery Coll                           | VM/SP            |
| MONTCOLC | Montgomery Coll                           | MUSIC/SP/VM      |
| MTAM     | Mount Allison U                           | MUSIC            |
| MTA      | Mount Allison U Comp Ctr                  | VM/SP RELEASE 3  |
| DSOMPA52 | MPA Stuttgart, Germany                    | DEC VMS 4 7      |
| DM0MPB51 | MPI Biochemie Muenchen                    | DEC VMS 4 6      |
| DTUMPI51 | MPI Biologie Tuebingen                    | DEC VAX VMS 4 7  |
| DMZMPI5P | MPI Chemie                                | VMS              |
| DHHMPI5D | MPI Fuer Meteorologie Hamburg             | VMS              |
| DM0MPI12 | MPI fuer Physik, Muenchen                 | IBM VM/SP R5 0   |
| DM0MPI53 | MPI fuer Physik, Muenchen                 | DEC VMS 4 6      |
| DHDMPI50 | MPI Kernphysik Heidelberg                 | DEC VMS 4 7      |
| DHDMPI5  | MPI Kernphysik Heidelberg                 | DEC VMS 4 7      |
| DHDMPI5U | MPI Kernphysik Heidelberg                 | DEC VMS 4 6      |
| DHDMPI5V | MPI Kernphysik Heidelberg                 | DEC VMS 4 7      |
| DHDMPI5H | MPI Kernphysik Heidelberg                 | DEC VMS 4 7      |
| DHDMPI5D | MPI Kernphysik Heidelberg                 | DEC MICROVMS 4 5 |
| DHDMPI52 | MPI Kernphysik Heidelberg                 | DEC VMS 4 7      |
| DGAIPP5D | MPI Plasmaphysik Garching                 | DEC VMS 4 5      |
| DS0MPI11 | MPI Stuttgart, Germany                    | IBM VM/SP R5     |
| MSUCEM   | MSU Dept. Chemistry                       | VMS              |
| MSUKBS   | MSU KBS                                   | VMS              |
| MSUNSCL  | MSU NSCL                                  | VMS              |
| MSUPA    | MSU Physics Dept                          | VMS              |
| MSVU     | Mt St Vincent U                           | VMS              |
| MSRCVAX  | Mt. Sinai Sch of Med Res Comp of CUNY     | VMS              |
| NCSUNE   | N Caro S U Dept of Nucl Eng               | VMS              |
| NIU      | N Ill U                                   | MVS              |
| NIUENG   | N Ill U                                   | VM/SP            |
| UMDNJVM1 | N J Univ. Med & Dent                      | VM/SP            |
| CANADA01 | N.A.C.                                    | VM/SP            |
| JPNNUHEP | Nagoya U HEPL                             | OS IV/F4 MSP     |
| JPNNUCBA | Nagoya Univ of Commerce                   | VM/SP            |
| NTIVAX   | Nanyang Technological Inst                | VMS              |
| JPNCUN10 | Nanzan Univ                               | VM/SP            |
| JPNCUN20 | Nanzan Univ                               | VM/SP            |
| NASAGISS | NASA Goddard Inst Space Stud              | VM/SP            |
| IAFBIT   | NASA GSFC Image Analysis Fac              | VMS              |
| SCFMVS   | NASA Space & Earth Sci CC                 | MVS/SP           |
| SCFVM    | NASA Space & Earth Sci CC                 | VM/HPO           |
| VPFMVS   | NASA Space & Earth Sci CC                 | MVS/SP           |
| VPFVM    | NASA Space & Earth Sci CC                 | VM/SP            |
| AOVAX1   | Nat'l A & I Ctr - Arecibo Observ          | VMS              |

|          |                                          |             |
|----------|------------------------------------------|-------------|
| NAS      | Nat'l Acad of Sci PC/Netwrk              | PC DOS      |
| NASVM    | Nat'l Acad of Sci VM/SP                  | VM/SP       |
| TWNCTUCS | Nat'l Chiao-Tung Univ                    | VMS         |
| NCARIO   | Nat'l Ctr for Atmosph Res                | VM/SP HPO   |
| NIEHS    | Nat'l Instit of Environ Health Sci       | VMS         |
| NIEHSC   | Nat'l Instit of Environ Health Sci       | VMS         |
| NIEHSD   | Nat'l Instit of Environ Health Sci       | VMS         |
| NRAO     | Nat'l Radio Astronomy Observ.            | VMS         |
| TWNCTU01 | National Chia-Tung Univ                  | VMS         |
| NIHCUDEC | National Institutes of Health (DEC-10)   | TOPS-10     |
| NIHCU    | National Institutes of Health (IBM 370)  | MVS/XA      |
| NIHCULSU | National Institutes of Health (LSU)      | VMS         |
| NIHCUSV1 | National Institutes of Health (Server 1) | VM/SP       |
| NIHCUTST | National Institutes of Health (Test/Dev) | MVS/XA      |
| NIHDCRT  | National Institutes of Health DCRT       | 3PLUS       |
| NIHKLMB  | National Institutes of Health, NIDDK/LMB | VMS         |
| TSSNRC00 | National Res Council                     | TSS/370     |
| NRCNET   | National Research Council                | VAX/VMS     |
| NRCCAD   | National Research Council                | VAX/VMS     |
| MVSNRC00 | National Research Council                | MVS/XA      |
| ICNUCEVM | National U Comp Ctr - Pisa               | VM/SP       |
| ICNUCEVS | National U Comp Ctr - Pisa               | IBM MVS     |
| NUSVM    | National Univ of Singapore               | VM HPO 4.2  |
| NUSEEV   | National Univ of Singapore               | VMS         |
| NUSDISCS | National Univ of Singapore               | VMS         |
| NUS3090  | National Univ of Singapore               | VM HPO 4.2  |
| ILNCRD   | Natl Cncl Res Dev MSD                    | DEC VMS     |
| ILNITE   | Natl Inst for Test and Eval              | DEC VMS     |
| NRCVM01  | Natl Res Cncl Canada Comp Ctr            | VM/SP       |
| NAVPGS   | Naval Postgrad Sch                       | VM/SP       |
| GUNBRF   | NBRF/ Georgetown Univ Med Ctr            | VMS         |
| CMEAMRF  | NBS Adv. Mfg. Res Fac.                   | VMS         |
| NBS      | NBS Consolidated Scie Comp Sys           | NOS         |
| NBSENH   | NBS Ex. Networks Host                    | VMS         |
| NBSMICF  | NBS Mgmt. Info. Comp. Fac.               | VM/SP       |
| MSMFVM   | NBS Molecular Structure Model Fac        | VM          |
| NCSUPHYS | NC State Univ                            | VMS         |
| NCSUMAEV | NCSI Mech & Aerospace Eng                | VMS         |
| NCSUMAE  | NCSU Mech & Aerospace Eng                | VM/SP       |
| NCSUCE   | NCSU Civil Eng                           | VMS         |
| NCSUVAX  | NCSU Computing Center                    | VMS         |
| NCSUVM   | NCSU Computing Center                    | VM/SP4      |
| NCSUECE  | NCSU Elec & Comp Eng                     | VMS         |
| NCSUIE   | NCSU Industrial Eng                      | VMS         |
| NCSUMTE  | NCSU Materials Eng                       | VMS         |
| NDSUVM1  | ND Higher Ed Computer Net                | VM/SP       |
| NDSUVAX  | ND Higher Ed Computer Net                | UNIX        |
| NEVIS    | Nevis Lab, Columbia U                    | VMS         |
| NJECNVM  | New Jersey Edu Computer Net              | VM/SP       |
| NJECNVS  | New Jersey Edu Computer Net              | MVS/SP      |
| NJECNVM1 | New Jersey Edu Computer Net              | VM/SP       |
| NJECNVM2 | New Jersey Edu Computer Net              | VM/XA       |
| ORION    | New Jersey Inst of Tech Conf Ctr         | VM/SP       |
| MERCURY  | New Jersey Inst of Tech Conf Ctr         | VM/SP       |
| NMSUMVS1 | New Mexico St U Comp Ctr                 | MVS/SP      |
| NMSUVM1  | New Mexico St U Comp Ctr                 | VM/SP       |
| NMSU     | New Mexico St U Comp Ctr                 | SUNOS       |
| NYSPI    | New York Psych Inst                      | VM/SP       |
| NYUACF   | New York U Academic Comp                 | VMS         |
| NYUACF7  | New York U Academic Comp                 | VMS         |
| NYUACF1  | New York U Academic Comp                 | VMS         |
| NYUACF6  | New York U Academic Comp                 | VMS         |
| NYUCIMSA | New York U CIMS                          | VM/SP       |
| NYUCCVM  | New York U Comp Ctr                      | VM/SP       |
| NYUCMCL1 | New York U Courant Math & Comp. Lab      | VMS         |
| NYUMED   | New York U Med Ctr                       | VMS         |
| DKNBI51  | Niels Bohr Institute, Denmark            | DEC VMS 4 6 |
| JPNNIHOC | Nihon U Col of Commerce                  | VM/SP       |
| UMDNJPW1 | NJ Univ Med & Dent                       | VSE/SP      |
| UMDNJVM2 | NJ Univ of Med & Dent                    | VM/SP       |

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|----------|------------------------------------------|--------------------|
| NOFDB    | NLH-Aas, Norway                          | VM/SP R5           |
| NCSUMEAS | North Carolina St U                      | VMS                |
| NCSUSTAT | North Carolina St U                      | VMS                |
| NCSUCHE  | North Carolina St U Chem Engr            | VMS                |
| NCSUMATH | North Carolina State U                   | VM/SP4             |
| NCSUADM  | North Carolina State Univ Admin Comp Ctr | MVS/SP             |
| NEMOVM   | Northeast Missouri State Univ            | VM/SP              |
| NEMOMUS  | Northeast Missouri State Univ            | VM/SP              |
| NUHUB    | Northeastern U Comptng Res Ctr           | VMS                |
| NEUVMS   | Northeastern U Dept Physics              | VMS                |
| NAUVM    | Northern Arizona Univ                    | VM/SP HPO          |
| NAUVAX   | Northern Arizona Univ                    | VMS                |
| NUACC    | Northwestern Univ Vogelback Comp Ctr     | VMS                |
| NUCYB    | Northwestern Univ Vogelback Comp Ctr     | NOS                |
| NRCBSP   | NRC Biological Sciences Protein          | VAX/VMS            |
| NRCCIT   | NRC Cd                                   |                    |
| NRCHEM   | NRC Chemistry Division                   | VAX/VMS            |
| NRCDRA   | NRC Dominion Astrophysical Obs           | VAX/VMS            |
| NRCDAO   | NRC Dominion Radio Astro Obs             | VAX/VMS            |
| NRCHEP   | NRC High Energy Physics                  | VAX/VMS            |
| NRCHYD   | NRC Hydraulics Lab                       | VAX/VMS            |
| NRCIDO   | NRC Industry Development Off             | VAX/VMS            |
| NRCPHY   | NRC Physics Division                     | VAX/VMS            |
| NSF      | NSF                                      | UNIX               |
| CRNLAES  | NYSAES                                   | PRIMOS             |
| CERAMICS | NYSC of Ceramics at Alfred Univ          | VMS                |
| NYBVX1   | NYU Graduate Business School             | VMS                |
| FROCF51  | O.P.G.C, Clermont-Ferrand, FR            | DEC VMS            |
| ORNLSTC  | Oak Ridge Nat'l Lab                      | VMS                |
| CESARVAX | Oak Ridge Natl Lab Ctr Engg Sys Adv Res  | VMS                |
| OCC      | Oakland Comm Co                          | VM                 |
| OBERLIN  | Oberlin College                          | VMS                |
| FRONI51  | Observatoire - Nice                      | VMS                |
| FROBES51 | Observatoire de Besancon, Fran           | DEC VMS            |
| FROBOR51 | Observatoire de Boreaux                  | DEC VMS            |
| FROMRS51 | Observatoire de Marseille, Fr            | DEC VMS            |
| FRMEU51  | Observatoire de Paris, Meudon            | VMS                |
| FRNEAB51 | OCDE                                     | DEC VMS            |
| OCLCRSUN | OCLC                                     | UNIX 4.2 BSD       |
| OHSTVMB  | Ohio State U CAD/CAM                     | VM/SP              |
| OHSTCH   | Ohio State U Chem Dept                   | VMS                |
| OHSTHR   | Ohio State U Ctr for Human Resource Res  | VMS                |
| OHSTMVSA | Ohio State U IRCC                        | MVS/SP             |
| OHSTVMA  | Ohio State U IRCC                        | VM/SP              |
| OHSTPY   | Ohio State U Physics Dept.               | VMS                |
| OHSTPHRM | Ohio State Univ Coll of Pharm            | VM/SP              |
| OUACCVMB | Ohio Univ Athens                         | VM/SP              |
| OUACCVMA | Ohio Univ, Athens                        | VM/SP              |
| OWUCOMCN | Ohio Wesleyan Univ                       | VMS                |
| JPNONRI  | Okazaki Nat'l Res Instit                 | VMS                |
| OSUCC    | Oklahoma State Univ CC                   | MVS/XA             |
| UCCVMS   | Oklahoma State Univ CC                   | VMS                |
| ODUVM    | Old Dominion U                           | VM/SP              |
| UTOPVM   | OPAL, CERN, Geneva, Switzerland          | IBM VM/SP HPO 4 2  |
| HHEOUH51 | Open Universiteit Heerlen                | VMS 4 4            |
| HHEOUH54 | Open Universiteit Heerlen                | VMS 4 4            |
| HHEOUH53 | Open Universiteit Heerlen                | VMS 4 4            |
| HHEOUH52 | Open Universiteit Heerlen                | VMS 4 4            |
| DBNUOR1  | Operations Research Bonn                 | IBM VM/SP R4       |
| ORSTATE  | Oregon State UCS                         | NOS 2.5.1-678      |
| ORSTVM   | Oregon State Univ.                       | VM                 |
| JPNDENTU | Osaka Electro-Comm Univ                  | UNIS 4.2 BSD       |
| JPNOIT10 | Osaka Inst of Tech                       | VM/SP              |
| JPNOSKFM | Osaka U HEPL                             | OS IV/F4 MSP       |
| JPNOSAKA | Osaka Univ Ed Ctr                        | VM/SP              |
| FINOU    | Oulu Univ                                | IBM VM/SP HPO R3 4 |
| FINOUC   | Oulu University, Finland                 | MICROVMS 4 6       |
| FRPQT51  | P.Q.T., Toulouse, France                 | DEC VMS            |
| PACEVM   | Pace Univ Pleasantville-Briarcliff Camp  | VM/SP              |
| PLU      | Pacific Lutheran Univ                    | VMS                |

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|----------|-------------------------------------------|-----------------|
| IPDUNIV  | Padova U Comp Ctr                         | VM/SP RELEASE 5 |
| PANAM2   | Pan American Univ                         | VMS             |
| PANAM1   | Pan American Univ                         | VMS             |
| PANAM    | Pan American Univ                         | VMS             |
| PSUVALM  | Penn S U Comp Sci VLSI Dev                | UNIX BSD        |
| PSUARCH  | Penn St U Arch Comp Lab                   | VMS             |
| PSUACL   | Penn St U Arch Computer Lab               | VMS             |
| PSU2020  | Penn St U Engr Comp Lab                   | TOPS-20         |
| PSUECLC  | Penn St U Engr Comp Lab                   | VMS             |
| PSUECLA  | Penn St U Engr Comp Lab                   | VMS             |
| PSUECLB  | Penn St U Engr Comp Lab                   | VMS             |
| PSUHCX   | Penn St U Engr Comp Lab                   | UNIX            |
| PSUCEMD  | Penn St U Engr Comp Lab                   | VMS             |
| PSUMEV   | Penn St U Mech. Engr.                     | VMS             |
| PSUCHEM  | Penn State - Chemistry                    | VM/SP           |
| PSUARLB  | Penn State Applied Res Lab                | VMS             |
| PSUARLC  | Penn State Applied Res Lab                | VMS             |
| PSUARLA  | Penn State Applied Res Lab                | VMS             |
| PSULEPSI | Penn State Elmnt. Particle Lab            | VMS             |
| PSULEPSR | Penn State Elmnt. Particle Lab            | VMS             |
| PSULEPSA | Penn State Elmnt. Particle Lab            | VMS             |
| PSULEPSH | Penn State Elmnt. Particle Lab            | VMS             |
| PSUECL2  | Penn State Engin. Computer Lab            | VM/SP           |
| PSUVAXG  | Penn State U                              | UNIX BSD        |
| PSUVAXS  | Penn State U                              | UNIX BSD        |
| PSUDG1   | Penn State U                              | AOS/VS          |
| PSUPENA  | Penn State U Agric Ext Net                | VMS             |
| PSUPENB  | Penn State U Agric Ext Net                | VMS             |
| PSUALT   | Penn State U Altoona                      | VMS             |
| PSUVMXA  | Penn State U CAC                          | VM/XA SP1       |
| PSUSUN01 | Penn State U CAC                          | SUN OS 4.0      |
| PSUED1   | Penn State U Coll of Ed                   | VMS             |
| PSUCES1  | Penn State U Comm. Ed Sys                 | VMS             |
| PSUCES3  | Penn State U Comm. Ed Sys                 | VMS             |
| PSUVM    | Penn State U Comp Ctr                     | VM/XA           |
| PSUCURT  | Penn State U CompSci                      | ACIS UNIX 4.3   |
| PSUDEC10 | Penn State U Eng Comp Lab                 | TOPS-10         |
| PSUNUCE  | Penn State U Eng. Dept.                   | VM/SP           |
| PSUHMC   | Penn State U Hershey Med Ctr. Res. Cmptng | VM/SP           |
| PSUHMED  | Penn State U Hershey Med Ctr. Res. Cmptng | VMS             |
| PSUMVS   | Penn State University                     | MVS/XA          |
| PSUPDP1  | Penn State University                     | UNIX R6         |
| PSUVALP  | Penn SU Comp Sci VLSI Dev                 | UNIX BSD        |
| PSUVAX1  | Pennsylvania State U                      | UNIX BSD        |
| PEPVAX   | Pepperdine Univ Acad Comp VAX             | ULTRIX          |
| PEPPCDRM | Pepperdine Univ Admin Cmptng IBM MVS      | MVS/XA          |
| CPWPSCA  | Pgh Supercomputer Ctr                     | VMS             |
| CPWPSCB  | Pgh Supercomputer Ctr                     | VMS             |
| DMRHRZ11 | Philipps-Universitaet Marburg             | IBM VM/SP R4 0  |
| DHDPHY5  | Physikalisches Institut                   | VMS             |
| DBNPIB5  | Physikalisches Institut der U Bonn        | DEC VMS 4 6     |
| ITOPOLI  | Politecnico di Torino                     | VMS             |
| ITOPOLI3 | Politecnico di Torino                     | VMS             |
| ITOPOLI4 | Politecnico di Torino                     | VMS             |
| ITOPOLI1 | Politecnico di Torino                     | VMS             |
| ITOPOLI2 | Politecnico di Torino                     | VMS             |
| IMIPOLI  | Politecnico Milano                        | IBM VM/SP R4 1  |
| POLYTECH | Polytechnic U Comp Ctr                    | VM/SP           |
| POLYGRAF | Polytechnic U Comp Ctr                    | VM/SP           |
| POMONA   | Pomona Col Comp Ctr                       | VM/SP           |
| PCMATH   | Pomona Col Mathematics Dept               | VMS             |
| PSUORVM  | Portland State Univ CC                    | VM/SP           |
| PRATT    | Pratt Institute Comp Ctr                  | PRIMOS          |
| PPLCATS  | Princeton Univ PLasma Phys. Lab           | VM/SP           |
| PUCC     | Princeton University                      | VM/SP           |
| PUFORBES | Princeton University                      | VM/SP           |
| PUNFS    | Princeton University                      | VM/SP           |
| PU1879   | Princeton University                      | VM/SP           |
| PUMIS    | Princeton University                      | VM/SP           |
| DHIAVM   | PSU Dairy Herd Improv. Assn.              | VM/SP           |

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|----------|-------------------------------------|-----------------------|
| PSULIAS  | PSU Library Info Access Sys         | HONEYWELL CP-6        |
| PSUADMIN | PSU Mgmt. Srvs                      | MVS/XA                |
| PURCHE   | Purdue U Chem Engr Dept             | VM/SP                 |
| PURCCVM  | Purdue U Comp Ctr                   | VM/SP                 |
| PURVLSI  | Purdue U EE VLSI Lab                | VM/SP                 |
| QUCDNEE1 | Queen's Electrical Engineering      | VMS                   |
| QUCDNTRI | Queen's Electrical Engineering      | VMS                   |
| QUCDNEE  | Queen's Electrical Engineering      | VMS                   |
| QCVAXA   | Queens College CUNY                 | VMS                   |
| QCVAXB   | Queens College CUNY                 | VMS                   |
| QCVAXC   | Queens College CUNY                 | VMS                   |
| QCUNIX   | Queens College CUNY                 | ULTRIX                |
| QCVAX    | Queens College CUNY                 | VMS                   |
| QUCDNCMC | Queens U Can Microelec Corp         | VMS                   |
| QUCDNAST | Queens Univ Astronomy               | VMS                   |
| QUCIS    | Queens University                   | UNIX                  |
| QUCDN    | Queens University                   | VM/SP                 |
| QUCDNSUR | Queens University Surgery           | VMS                   |
| AWIRAP01 | RA-Physik                           | VMS 4 5 LAVC          |
| AWIRAP02 | RA-Physik                           | VMS 4 5 LAVC          |
| DACTH51  | Rechenzentrum der RWTH Aachen       | VMS                   |
| DKAUNI11 | Rechenzentrum U Karlsruhe           | IBM VM/SP R4          |
| DKAUNI46 | Rechenzentrum U Karlsruhe           | SIEMENS BS3000 MSP 20 |
| DKAUNI48 | Rechenzentrum U Karlsruhe           | SIEMENS BS3000 MSP 20 |
| REED     | Reed College                        | BERKELEY UNIX         |
| RCN      | Regents Computer Network            | NOS                   |
| IRTCORK  | Regional Tech College Cork          | VM/IS                 |
| GREARN   | Research Ctr of Crete               | VM/SP                 |
| RLG      | Research Libraries Grp              | MVS/SP                |
| RHODES   | Rhodes College CC                   | VMS                   |
| DKLUNI01 | RHRK Kaiserslautern                 | SIEMENS BS3000 MSP    |
| DKLUNI85 | RHRK Kaiserslautern, Germany        | SIEMENS BS2000        |
| DKLUNI86 | RHRK Kaiserslautern, Germany        | SIEMENS BS2000        |
| DBNUZR1A | RHRZ Uni Bonn, Germany              | IBM VM/SP HPO R4.2    |
| RICECSVM | Rice U Comp Sci Dept.               | VM/SP                 |
| RICE     | Rice Univ ICSCA                     | VM/SP                 |
| ITORIPTO | Ricerch e Progetti Torino           | VM/SP                 |
| BGERUG51 | Rijks Univ                          | VMS                   |
| HLERUL52 | Rijksuniver Leiden Gorl Lab         | VMS 4 1               |
| RITVM    | RITISC                              | VM/SP HPO             |
| RITVAXA  | Rochester Inst of Tech              | VMS                   |
| RITVAXB  | Rochester Inst of Tech              | VMS                   |
| RITVAXC  | Rochester Inst of Tech              | VMS                   |
| RITVAXD  | Rochester Inst of Tech              | VMS                   |
| RITVAXN  | Rochester Inst of Tech              | VMS                   |
| RITVAX   | Rochester Inst of Tech              | VMS                   |
| RITVAXO  | Rochester Inst of Tech (NTID)       | VMS                   |
| RITVAXL  | Rochester Inst of Tech.             | VMS                   |
| ROCKVAX  | Rockefeller University              | UNIX BSD              |
| ROHVM1   | Rohm & Haas Co                      | VM/HPO                |
| RHIT     | Rose-Hulman Inst.                   | VMS                   |
| RMC      | Royal Military College              | CP-6                  |
| RPICMPVM | RPI Ctr Mfg Prod                    | VM/SP                 |
| RPICICGD | RPI Graphics Center                 | VM/SP                 |
| RPICICGE | RPI Graphics Center                 | VM/SP                 |
| RPITSMTS | RPI Info Tech Srvs                  | MTS/XA DIST 5.1C      |
| RPITSGW  | RPI Info Tech Srvs                  | UTX                   |
| DHVRZNO  | RRZN, Univ Hannover, Germany        | CDC NOS               |
| DHVRZNI  | RRZN, Univ Hannover, Germany        | IBM VM/SP R4 0        |
| BANRUC01 | RUCA, Antwerpen, Belgium            | NOS 2 5               |
| DBORUB01 | Ruhr-Univ Bochum                    | CDC NOS/VE            |
| NORUNIX  | RUNIT                               | ULTRIX 2 0            |
| RUTHEP   | Rutgers U High Energy Physics       | VMS                   |
| DRACO    | Rutgers Univ CCIS                   | VMS                   |
| RUTGERS9 | Rutgers Univ CCIS MVS               | MVS/SP                |
| CANCER   | Rutgers Univ CCIS VAX               | VMS                   |
| ZODIAC   | Rutgers Univ CCIS Vax Clust         | VMS                   |
| RUTVM1   | Rutgers Univ CCIS VM1               | VM/SP                 |
| BIOVAX   | Rutgers Univ Molecular Bio Comp Lab | VMS                   |
| DACTH01  | RWTH Aachen, Germany                | CDC NOS 2 4           |

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| RYERSON   | Ryerson                            | VM/SP             |
| DWUUNI21  | RZ Uni Wuerzburg, Germany          | IBM MVS 3 8       |
| YUBGSS21  | RZS SR Srbije, Yugoslavia          | IBM MVS/SP 1 3.8  |
| SERVAX    | S Reg Data Ctr                     | VMS               |
| SER       | S Reg Data Ctr Tamiami Campus      | OS 1100           |
| SLUVCA    | Saint Louis Univ                   | VMS               |
| SALK      | Salk Instit                        | VMS               |
| SHSUTHOR  | Sam Houston State Univ             | VMS               |
| SHSU      | Sam Houston State Univ             | VMS               |
| SHSUODIN  | Sam Houston State Univ             | VMS               |
| SAMFORD   | Samford Univ                       | VM/SP             |
| SDSC      | San Diego Supercomputer Ctr        | VMS               |
| SCU       | Santa Clara Univ                   | VMS               |
| HASARA11  | SARA Amsterdam, Netherlands        | VM/SP R4          |
| JPNSUT50  | Scienc U Tokyo Y J Coll            | VM/SP             |
| JPNSUT00  | Science U of Tokyo                 | VM/SP             |
| JPNSUT40  | Science U of Tokyo                 | VM/SP             |
| JPNSUT31  | Science U of Tokyo Noda            | VMS               |
| JPNSUT10  | Science U Tokyo - Japan            | VM/SP             |
| JPNSUT20  | Science U Tokyo - Japan Kagurazaka | VM/SP             |
| JPNSUT30  | Science U Tokyo - Japan, Noda      | VM/SP             |
| JPNSUT3A  | Science U Tokyo - Japan, Noda      | MUSIC             |
| JPNSUT01  | Science Univ of Tokyo              | VM/SP             |
| JPNICEPP  | Science Univ of Tokyo ICEPP        | VM/SP             |
| BMLSCK11  | SCKCEN Mol Belgium                 | VM/SP R4          |
| IPISNSVA  | Scuola Normale Superiore           | DEC VMS 4 3       |
| IPISNSIB  | Scuola Normale Superiore           | VM/SP             |
| SENECA    | Seneca College                     | VMS               |
| KRSNUCC1  | Seoul Nat'l Univ CC                | VM/HPO            |
| SETONVM   | Seton Hall U CC                    | VM/SP             |
| SETONMUS  | Seton Hall Univ CC                 | VM/SP             |
| JPNSNU10  | Setsunan Univ                      | VM/SP             |
| JPNSNU20  | Setsunan Univ                      | VM/SP             |
| SHERCOL1  | Sheridan College                   | VMS               |
| JPNSWU10  | Showa Women's Univ                 | VM/SP             |
| IMISIAM3  | SIAM IFC, Milano, Italy            | IBM VM/SP HPO 4 0 |
| IMISIAM2  | SIAM IFC, Milano, Italy            | IBM VM/SP HPO 4 0 |
| SFU       | Simon Fraser U Comp Svcs           | MTS               |
| SFUV      | Simon Fraser U Comp Svcs           | VM/SP             |
| ITSSISSA  | SISSA, Trieste, Italy              | UNIX UTX          |
| SKIDMORE  | Skidmore College                   | VMS               |
| SLACASP   | SLAC ASP Experiment                | VMS               |
| SLACVM    | SLAC Computer Center               | VM/SP             |
| SLACESA   | SLAC End Station A                 | VMS               |
| SLACHRS   | SLAC High Res Spectrometer         | VMS               |
| SLACMAC   | SLAC Magnetic Calorimeter          | VMS               |
| SLACMKII  | SLAC Mark-II Detector              | VMS               |
| SLACM2    | SLAC Mark-II Detector              | VMS               |
| SLACMK3   | SLAC Mark-III Detector Exp         | VMS               |
| SLACPCR   | SLAC PCR                           | VMS               |
| SLACSLC   | SLAC SLC                           | VMS               |
| SLACSLD   | SLAC SLD Detector                  | VMS               |
| SLACTBF   | SLAC TBF                           | VMS               |
| SLACTWGM  | SLAC TCP/Two-Gamma Experiment      | VMS               |
| SLACUCSD  | SLAC TCP/2-Gamma Expt (UCSD)       | VMS               |
| SLACTPCS  | SLAC TPC/Two-Gamma Experiment      | VMS               |
| SLACPHYS  | SLAC TPC/Two-Gamma Experiment      | VMS               |
| SMITH     | Smith College                      | VMS               |
| SIVM      | Smithsonian Instit                 | VM/SP             |
| TWN SCU10 | Soochow Univ                       | VM/SP             |
| SDSUV     | South Dakota State Univ            | VM/HPO SP         |
| SEMASSU   | Southeastern Mass Univ             | VMS               |
| SIUCVMB   | Southern Illinois U - Carbondale   | VM/SP             |
| SIUEVM    | Southern Illinois Univ Edwardsvl   | VM/SP             |
| SMUV      | Southern Methodist U ACC           | VM/SP             |
| SMSVMA    | Southwest Missouri State Univ      | VM/SP             |
| SMSVMB    | Southwest Missouri State Univ      | VM/SP             |
| SMSVAXA   | Southwest Missouri State Univ      | VMS               |
| SWTEXAS   | Southwest Texas State Univ         | VMS               |
| SWTNYSSA  | Southwest Texas State Univ         | VMS               |



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| SWTTEGAN  | Southwest Texas State Univ           | VMS                     |
| STSCI     | Space Telescope Science Instit       | VMS                     |
| SLCSL     | St. Lawrence College                 | VM/CMS                  |
| STLAWU    | St. Lawrence Univ                    | VM/SP                   |
| STMARYS   | St. Mary's U                         | VMS                     |
| STMARYTX  | St. Mary's Univ of San Antonio       | VMS                     |
| SMCVAX    | St. Michael's Coll                   | VMS                     |
| SPCVXA    | St. Peter's Co                       | VMS                     |
| SESTAK    | Stacken, KTH Sweden                  | TOPS-10/7               |
| SSRL750   | Stanford Synchrotron Rad Lab         | VMS                     |
| STANFORD  | Stanford University                  | MVS/XA                  |
| SUSOLAR   | Stanford University                  | UNIX                    |
| SUWATSON  | Stanford University                  | VM/SP HPO 4.2           |
| OBERON    | Stanford University                  | VM/SP HPO 5.0           |
| MSUS1     | State Univ System of Minnesota       | VMS                     |
| SFAUSTIN  | Stephen F. Austin State Univ         | CP-6                    |
| SITVXB    | Stevens Inst Tech                    | VMS                     |
| SITVXC    | Stevens Inst Tech                    | VMS                     |
| HASARA5   | Stichting Academ Reken Amsterdam     | VMS 4                   |
| SEQZ11    | Stockholm U Comp Ctr                 | IBM VM/SP R4            |
| SEQZ21    | Stockholm U Comp Ctr                 | IBM MVS/SP 1 3.1        |
| SEQZ51    | Stockholm U Comp Ctr                 | DEC VMS                 |
| SESUF51   | Stockholm Univ                       | DEC VMS                 |
| QZCOM     | Stockholm Univ CC                    | TOPS-10/7               |
| SEQZ01    | Stockholm Univ CC                    | CDC NOS 2 4.1 LEVEL 642 |
| SEQZ02    | Stockholm Univ CC                    | CDC NOS 2 4.1 LEVEL 642 |
| QZKOM     | Stockholm Univ CC                    | TOPS-10/7               |
| DBNISKP5  | Strahlen-Kernphysik Uni Bonn         | DEC VMS 4 4             |
| SEGATE    | SUNET                                | UNIX BSD4 3             |
| FRSUN12   | SUNIST,                              | IBM VM/SP               |
| ALBANY1VX | SUNY Albany CC VAX VMS               | VMS                     |
| UBVMSC    | SUNY Bflo CC                         | VMS                     |
| UBVMSD    | SUNY Bflo CC                         | VMS                     |
| BINGVAXA  | SUNY Binghamton                      | VMS                     |
| BINGVAXB  | SUNY Binghamton                      | VMS                     |
| BINGVAXC  | SUNY Binghamton                      | VMS                     |
| BINGVMA   | SUNY Binghamton                      | VM/SP                   |
| BINGVMB   | SUNY Binghamton                      | VM/SP                   |
| SUNYBING  | SUNY Binghamton                      | VM/SP                   |
| BINGTJW   | SUNY Binghamton Sch of Engr          | VM/SP                   |
| SUNYBCS   | SUNY Buffalo Comp Sci Dept           | UNIX BSD                |
| SNYCENVM  | SUNY Central Admin CC                | VM/SP                   |
| SNYDELBA  | SUNY Coll of Technol at Delhi        | MCP                     |
| SNYBROBA  | SUNY College at Brockport            | MCP                     |
| BROCK1P   | SUNY College at Brockport - ACS      | PRIMOS                  |
| SNYBUFBA  | SUNY College at Buffalo              | MCP 3.6.2               |
| SNYBUFVA  | SUNY College at Buffalo              | VMS                     |
| SNYCANBA  | SUNY College at Canton               | MCP                     |
| SNYCOBBA  | SUNY College at Cobleskill           | MCP                     |
| SNYCORBA  | SUNY College at Cortland             | MCP                     |
| SNYFREBA  | SUNY College at Fredonia             | MCP                     |
| SNYGENBA  | SUNY College at Geneseo              | MCP                     |
| GENESEO   | SUNY College at Geneseo              | VMS                     |
| SNYNEWBA  | SUNY College at New Paltz            | MCP                     |
| SNYOLDBA  | SUNY College at Old Westbury         | MCP                     |
| SNYONEBA  | SUNY College at Oneonta              | MCP                     |
| SNYOSWBA  | SUNY College at Oswego               | MCP                     |
| SNYPLABA  | SUNY College at Plattsburgh          | MCP                     |
| SNYPLADG  | SUNY College at Plattsburgh          | AOS/VS                  |
| SNYPOTBA  | SUNY College at Potsdam              | MCP                     |
| SNYFARBA  | SUNY College Farmingdale             | MCP                     |
| SNYMORBA  | SUNY College Morrisville             | MCP                     |
| ADMBROOK  | SUNY Health Science Ctr Brooklyn     | VM/SP                   |
| SACBROOK  | SUNY Health Science Ctr Brooklyn     | VM/SP                   |
| SNYBKADM  | SUNY Health Science Ctr Brooklyn     | VM/SP                   |
| SNYBKSAC  | SUNY Health Science Ctr Brooklyn     | VM/SP                   |
| SNYALFBA  | SUNY of NY College of Tech at Alfred | MCP                     |
| SB BIOVM  | SUNY Stony Brook Biol Sci Comp       | VM/SP                   |
| SBCCVM    | SUNY Stony Brook Comp Ctr            | VM/HPO                  |
| SBCCMAIL  | SUNY Stony Brook Comp Ctr Mail       | VMS                     |

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| SUNYSBNP | SUNY Stony Brook Physics Dept       | VMS                |
| UBVMSA   | SUNY/Bflo CC                        | VMS                |
| UBVM     | SUNY/Bflo CC                        | VM/SP              |
| UBVMSB   | SUNY/Bflo CC                        | VMS                |
| UBVMS    | SUNY/Bflo CC                        | VMS                |
| ALBNYMVS | SUNYA EETR MVS                      | MVS/JES2           |
| ALBNYVM1 | SUNYA EETR VM                       | VM/HPO             |
| HUTSUR51 | SURFnet, Netherlands                | VMS 4 6            |
| SWATPRM  | Swarthmore College                  | VMS                |
| SEARN    | Sweden EARN                         | IBM VM/SP R4       |
| SUNSET   | Syracuse U                          | VMS                |
| SUNRISE  | Syracuse U                          | VMS                |
| SUAIS    | Syracuse U AIS                      | MVS                |
| SUCAD1   | Syracuse U CAD/CAM                  | VMS                |
| SUHEP    | Syracuse U High Energy Phys         | VMS                |
| SUZEUS   | Syracuse Univ Comp. Sys.            | VM/SP HPO          |
| SUVM     | Syracuse University                 | VM/HPO             |
| SUMVS    | Syracuse University                 | MVS                |
| JPNTAMA0 | Tamagawa Univ                       | VM/SP              |
| FINTUTA  | Tampere U Tech                      | DEC VMS 4 2        |
| FINTUT   | Tampere University of Techn         | UNIX 4 3 BSD       |
| TAMODP   | TAMU ODP                            | VMS                |
| TAMAGEN  | TAMU/AG Eng                         | VMS                |
| TAMMVS1  | TAMU/CSC                            | MVS/SP             |
| TAMVM1   | TAMU/CSC                            | VM/SP/HPO          |
| TAMENTO  | TAMU/ENTO                           | VMS                |
| TAMGEOP  | TAMU/GEOP                           | VMS                |
| TARLETON | Tarleton State Univ - DPC           | NOS                |
| HDETUD2  | Tech Hoogeschool Delft              | MVS/SP 1 3.4       |
| HDETUD5  | Tech Hoogeschool Delft              | VMS 4 4            |
| DB0TUI6  | Tech U Berlin Infor KBS             | UNIX 4 2 BSD       |
| DBSINF6  | Tech U Braunschweig Info            | ULTRIX             |
| DM0TUI1S | Tech U Informatik, Muenchen         | IBM VM/SP R5 06    |
| DDADVS1  | Techn Darmstadt Fachber Inform      | IBM VM/SP R3       |
| TUNS     | Technical Univ of Nova Scotia       | VMS                |
| TECHCDC  | Technion - CDC                      | NOS 2.4.3          |
| TECHMVS  | Technion - Haifa                    | MVS/SP             |
| TECHNION | Technion - Haifa                    | IBM VM/SP HPO 4 2  |
| TECHSEL  | Technion Dept Math - Haifa          | UNIX               |
| TECHUNIX | Technion Dept of Math               | UNIX BSD 4 3       |
| TECHDPD  | Technion, Haifa                     | MVS/JES2           |
| HENTHT5  | Technische Hogeschool Twente        | VMS 4 2            |
| DB0TUI11 | Technische U Berlin                 | IBM VM/SP          |
| DB0TUM11 | Technische U Berlin Maschinen       | IBM VM/SP          |
| DB0TUZ01 | Technische U Berlin Rechenzentrum   | NOS                |
| DB0TUS11 | Technische U Berlin Schiffs         | IBM VM/SP          |
| ICSATAXA | Tecnoopolis CSATA Novus Ortus       | IBM MVS/XA         |
| TAUNIVM  | Tel Aviv U Comp Ctr                 | IBM VM/SP HPO R4 2 |
| TAUNOS   | Tel Aviv U Comp Ctr                 | CDC NOS 2 5.3      |
| TAURUS   | Tel Aviv U Comp Ctr                 | UNIX BSD 4 2       |
| TAUENG   | Tel Aviv U Eng Sch                  | DEC VMS 4 2        |
| TAUPHY   | Tel Aviv Univ Nuc Phys              | DEC VMS 3 7        |
| TAUVE    | Tel Aviv University                 | CDC NOS/VE 1 2.3   |
| TEMPLEVM | Temple U Comp Activity              | VM/SP              |
| TMPLSUPR | Temple U Computer Activity          | VM/SP              |
| TMPLCIS  | Temple U Computer Activity          | VMS                |
| TMPLNOS  | Temple University Computer Activity | NOS                |
| TNTECH   | Tennessee Tech Univ                 | VMS                |
| TAMCGF   | Texas A&M Engineering Graphics      | VMS                |
| TAMCBA   | Texas A&M U Acad Comp Ctr           | VM/SP              |
| TAMBIGRF | Texas A&M U Biochem                 | VMS                |
| TAMCHEM  | Texas A&M U Chemistry Dept          | VMS                |
| TAMSTAR  | Texas A&M U Comp Srvs Ctr           | VMS                |
| TAMVENUS | Texas A&M U Comp Srvs Ctr           | VMS                |
| TAMUNIX  | Texas A&M U Computing SC            | UNIX               |
| TAMLSR   | Texas A&M U CS/LSR                  | VMS                |
| TAMTCSL  | Texas A&M U EE-TCSL                 | VMS                |
| TAMVXEE  | Texas A&M U Electrical Engr         | VMS                |
| TAMNIL   | Texas A&M U Learning Tech Ctr       | VMS                |
| TAMMEACA | Texas A&M U ME/CAD                  | VMS                |

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| TAMVXRSC | Texas A&M U MML               | VMS              |
| TAMVXOCN | Texas A&M U Oceanography Dept | VMS              |
| TAMPHYS  | Texas A&M U Physics Dept      | VMS              |
| TAMCOMP  | Texas A&M Univ Cyclotron Inst | VMS              |
| TAMSIGMA | Texas A&M Univ ECS            | VMS              |
| TAMLSB   | Texas A&M Univ LMSB           | VMS              |
| TAMTURBO | Texas A&M Univ TURBO          | VMS              |
| TCUAVM   | Texas Christian Univ          | VM/SP            |
| TCUAMUS  | Texas Christian Univ          | MUSIC/SP         |
| TCUAVMS  | Texas Christian Univ          | VMS              |
| TCUBVM   | Texas Christian Univ          | VM/SP            |
| TTACS1   | Texas Tech U Acad Comp Srvs   | VMS              |
| TTACS2   | Texas Tech U Acad Comp Srvs   | VMS              |
| TTUVM1   | Texas Tech U Comp Facil       | VM/SP            |
| TTUHSCVM | Texas Tech U Health Sci Ctr   | VM/HPO           |
| DTUPEV5A | Th Astrophysik Univ Tuebingen | DEC VMS 4 3      |
| HDETUD1  | TH Delft, Netherlands         | VM/SP            |
| JPNTOHOK | Tohoku Univ                   | VM/SP            |
| JPNTHKVX | Tohoku Univ                   | VMS              |
| JPNTIU01 | Tokyo Intern'tl Univ          | VM/SP            |
| JPNTKUVN | Tokyo Keizai U                | VM/SP            |
| TOWSONVX | Towson State Univ             | VMS              |
| TOWSON1  | Towson State Univ             | VMS              |
| TOWSON2  | Towson State Univ             | VMS              |
| TRANSY   | Transylvania Univ             | MUSIC/SP         |
| TRENT    | Trent University              | VMS              |
| TSCVM    | Trenton State Co              | VM/SP            |
| TUCC     | Triangle U Comp Ctr           | MVS/SP           |
| TUCCVM   | Triangle U Comp Ctr           | VM/SP            |
| TUNL     | Triangle Univ. Nuclear Lab    | VMS              |
| TRINCC   | Trinity College               | VMS              |
| TRINCC2  | Trinity College               | VMS              |
| TRINITY  | Trinity Univ Computing Ctr    | VM/SP            |
| TRIUMFCL | TRIUMF Research               | VMS 4 5          |
| TRIUMFRG | TRIUMF Research               | VMS 4 5          |
| TRIUMFER | TRIUMF Research - ERICH       | VMS 4 5          |
| DB0TUI0  | TU Berlin                     | XEXOX            |
| DB0PTZ1A | TU Berlin                     | VM/SP            |
| DB0TUI62 | TU Berlin Informatik SWT      | UNIX 4 3 BSD     |
| DBSTU1   | TU Braunschweig, RZ, Germany  | IBM VM/SP R4 SSI |
| DBSNRV0  | TU Braynscgweug, NRV-Gateway  | XOS              |
| DCZTU1   | TU Clausthal                  | VM/SP            |
| HDETUD53 | TU Delft                      | VMS 4 5          |
| HDETUD52 | TU Delft                      | VMS 4 4          |
| HDETUD51 | TU Delft                      | VMS V4 4         |
| HEITHE5  | TU Eindhoven CC, Netherlands  | VMS 4 5          |
| HEITUE51 | TU Eindhoven CC, Netherlands  | VMS 4 5          |
| HEITUE1  | TU Eindhoven CC, Netherlands  | VM/SP            |
| HEIIP05  | TU Eindhoven IPO, Netherlands | VMS 4 5          |
| DGATUM5P | TU Muenchen Physik            | VMS              |
| DB0TUI66 | TUB Informatik ISTI           | UNIX 4 2 BSD     |
| TUFTS    | Tufts U                       | VMS              |
| TULIPS   | Tufts Univ                    | VMS              |
| TCSVM    | Tulane U Comp Svcs - VM       | VM/SP            |
| TCSMUSA  | Tulane U Comp Svcs Music A    | MUSIC            |
| TCSMVS   | Tulane U Comp Svcs MVS        | MVS/SP           |
| AKRON    | U Akron                       | MVS/XA 2 1.7     |
| AKRONVM  | U Akron                       | VM/SP HPO 5      |
| AKRONVAX | U Akron                       | ULTRIX           |
| UABCMC   | U Alabama B'ham - CMC         | VMS              |
| UABTUCC  | U Alabama Birmingham          | MVS/SP           |
| UABCVSR  | U Alabama Birmingham          | VM/IS            |
| UA1VM    | U Alabama Comp Ctr            | VM/SP HPO        |
| UALTAMTS | U Alberta Comp Svcs MTS       | MTS              |
| UALTAVM  | U Alberta Comp Svcs VM        | VM/SP            |
| EMDUAM11 | U Autonoma Madrid Ctr Calc    | VM/SP            |
| EB0UB012 | U Barcelona Ctr Calculo       | VM/SP            |
| DBNVB12  | U Bonn Chemische Inst         | IBM VM/SP R3 1   |
| DBNUAMA1 | U Bonn Inst Mathematik        | IBM VM/SP R4     |
| DBNRHRZ1 | U Bonn Reg Hochschul          | IBM VM/SP R5     |

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| DBNRHRZ2 | U Bonn Reg Hochschulrechenzent  | MVS/SP      |
| UCIPPRO  | U CA Irvine, Publ Policy Rsrch  | VM/SP       |
| UCSFBCL  | U CA San Fran Biochem Lab       |             |
| UCSFC255 | U CA San Fran Clin Lab          |             |
| UCSFCCB  | U CA San Fran Comp Ctr          |             |
| UCSFCGL  | U CA San Fran Comp Grap Lab     |             |
| UCSFVIVO | U CA San Fran Infect Lab        |             |
| UCSFMIS  | U CA San Fran Med Info Sci      |             |
| UCSFNMR  | U CA San Fran Nuc Mag Reson Lab |             |
| UNCAACTC | U Calgary A C.T. Centre         | MULTICS     |
| UCDASVM1 | U Calgary Dept Admin Servs      | VM/SP       |
| UCBEAR   | U Calif Berkeley                | UNIX BSD    |
| UCBDOROT | U Calif Berkeley                | UNIX BSD    |
| UCBERNIE | U Calif Berkeley                | UNIX BSD    |
| UCBEROS  | U Calif Berkeley                | UNIX BSD    |
| UCBBACH  | U Calif Berkeley                | UNIX BSD    |
| UCBAMBER | U Calif Berkeley                | UNIX BSD    |
| UCBARPA  | U Calif Berkeley                | UNIX BSD    |
| UCBDEAN  | U Calif Berkeley                | UNIX BSD    |
| UCBDEGAS | U Calif Berkeley                | UNIX BSD    |
| UCBBERYL | U Calif Berkeley                | UNIX BSD    |
| UCBBIZET | U Calif Berkeley                | UNIX BSD    |
| UCBBRAHM | U Calif Berkeley                | UNIX BSD    |
| UCBBUDDY | U Calif Berkeley                | UNIX BSD    |
| UCBCAD   | U Calif Berkeley                | UNIX BSD    |
| UCBCALDE | U Calif Berkeley                | UNIX BSD    |
| UCBCARTA | U Calif Berkeley                | UNIX BSD    |
| UCBCEVAX | U Calif Berkeley                | UNIX BSD    |
| UCBCORAL | U Calif Berkeley                | UNIX BSD    |
| UCBCMSA  | U Calif Berkeley                | VM/SP HPO   |
| UCBCOGSC | U Calif Berkeley                | UNIX BSD    |
| UCBCORY  | U Calif Berkeley                | UNIX BSD    |
| UCBDALI  | U Calif Berkeley                | UNIX BSD    |
| UCBEAST  | U Calif Berkeley                | UNIX BSD    |
| UCBESVAX | U Calif Berkeley                | UNIX BSD    |
| UCBDVIN  | U Calif Berkeley                | UNIX BSD    |
| UCBEULER | U Calif Berkeley                | UNIX BSD    |
| UCBFRANN | U Calif Berkeley                | UNIX BSD    |
| UCBGARNE | U Calif Berkeley                | UNIX BSD    |
| UCBHOLDE | U Calif Berkeley                | UNIX BSD    |
| UCBIC    | U Calif Berkeley                | UNIX BSD    |
| UCBICW   | U Calif Berkeley                | UNIX BSD    |
| UCBINGRE | U Calif Berkeley                | UNIX BSD    |
| UCBJASON | U Calif Berkeley                | UNIX BSD    |
| UCBJASPE | U Calif Berkeley                | UNIX BSD    |
| UCBJI    | U Calif Berkeley                | UNIX BSD    |
| UCBKEPLE | U Calif Berkeley                | UNIX BSD    |
| UCBKIM   | U Calif Berkeley                | UNIX BSD    |
| UCBLAPIS | U Calif Berkeley                | UNIX BSD    |
| UCBLILAC | U Calif Berkeley                | UNIX BSD    |
| UCBMATIS | U Calif Berkeley                | UNIX BSD    |
| UCBMAXWE | U Calif Berkeley                | UNIX BSD    |
| UCBMEDEA | U Calif Berkeley                | UNIX BSD    |
| UCBMERLI | U Calif Berkeley                | UNIX BSD    |
| UCBMIRO  | U Calif Berkeley                | UNIX BSD    |
| UCBMONET | U Calif Berkeley                | UNIX BSD    |
| UCBNEWTO | U Calif Berkeley                | UNIX BSD    |
| UCBOKEEF | U Calif Berkeley                | UNIX BSD    |
| UCBOZ    | U Calif Berkeley                | UNIX BSD    |
| UCBPEARL | U Calif Berkeley                | UNIX BSD    |
| UCBQAL   | U Calif Berkeley                | MV 8000 AOS |
| UCBRENOI | U Calif Berkeley                | UNIX BSD    |
| UCBROSE  | U Calif Berkeley                | UNIX BSD    |
| UCBSEYMO | U Calif Berkeley                | UNIX BSD    |
| UCBSHADO | U Calif Berkeley                | UNIX BSD    |
| UCBSIM   | U Calif Berkeley                | UNIX BSD    |
| UCBSRC   | U Calif Berkeley                | UNIX BSD    |
| UCBSYLV  | U Calif Berkeley                | UNIX BSD    |
| UCBTOPAZ | U Calif Berkeley                | UNIX BSD    |
| UCBTULIP | U Calif Berkeley                | UNIX BSD    |

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|-----------|-----------------------------------|--------------------|
| UCBUGS    | U Calif Berkeley                  | UNIX BSD           |
| UCBUNIXS  | U Calif Berkeley                  | UNIX BSD           |
| UCBVANGO  | U Calif Berkeley                  | UNIX BSD           |
| UCBVAX    | U Calif Berkeley                  | UNIX BSD           |
| UCBVIOLE  | U Calif Berkeley                  | UNIX BSD           |
| UCBWEYL   | U Calif Berkeley                  | UNIX BSD           |
| UCBZOOEY  | U Calif Berkeley                  | UNIX BSD           |
| UCBCED    | U Calif Berkeley                  | SUN UNIX           |
| UCBSOE    | U Calif Berkeley                  | SUN UNIX           |
| UCBSSL    | U Calif Berkeley                  | UNIX               |
| UCBBKYAS  | U Calif Berkeley                  | VMS                |
| UCBCCHEM  | U Calif Berkeley                  | ULTRIX             |
| UCBJADE   | U Calif Berkeley Campus           | UNIX BSD           |
| UCBJANUS  | U Calif Berkeley Campus           | ULTIX              |
| UCIVMSA   | U Calif Irvine Comp Ctr           | VMS                |
| UCIVMSC   | U Calif Irvine Comp Ctr           | VMS                |
| UCLATMOS  | U Calif LA UCLA Atmos Science     | VM/SP              |
| UCLAVM    | U Calif Los Angeles Acad Comp     | VM/SP              |
| UCLAMVS   | U Calif Los Angeles Acad Comp     | MVS/SP             |
| UCLAVMB   | U Calif Los Angeles Acad Comp     | VM/XA SF           |
| UCLASSCF  | U Calif Los Angeles Soc Sci Facil | VM/SP              |
| UCRVMS    | U Calif Riverside Acad Comp Ctr   | VMS                |
| UCRPHYS   | U Calif Riverside Phys Dept       | VMS                |
| UCSFCCA   | U Calif San Fran Comp Ctr         | UNIX BSD           |
| UCSFHC    | U Calif San Fran Hosp & Clinics   | VM/SP              |
| UCSFVM    | U Calif San Francisco             | VM/SP              |
| SBHEP     | U Calif Santa Barbara             | VMS                |
| UCSBVM    | U Calif Santa Barbara Comp Ctr    | VM/SP              |
| UCSBUXA   | U Calif Santa Barbara Comp Ctr    | BSD UNIX           |
| UCSBUXB   | U Calif Santa Barbara Comp Ctr    | BSD UNIX           |
| UCSCMVS   | U Calif Santa Cruz CATS IBM (MVS) | MVS/XA             |
| UCSCHU    | U Calif Santa Cruz H&A            | UNIX BSD           |
| UCSCCLICK | U Calif Santa Cruz Lick Obs       | UNIX               |
| UCSCA     | U Calif Santa Cruz Unix A         | UNIX BSD           |
| UCSCC     | U Calif Santa Cruz Unix C         | UNIX BSD           |
| UCSCD     | U Calif Santa Cruz Unix D         | UNIX BSD           |
| UCSCE     | U Calif Santa Cruz Unix E         | UNIX BSD           |
| UCSCF     | U Calif Santa Cruz Unix F         | UNIX BSD           |
| UCSCG     | U Calif Santa Cruz Unix G         | UNIX BSD           |
| UCSCH     | U Calif Santa Cruz Unix H         | UNIX BSD           |
| UCSCI     | U Calif Santa Cruz Unix I         | UNIX BSD           |
| UCSCJ     | U Calif Santa Cruz Unix J         | UNIX BSD           |
| UCSCK     | U Calif Santa Cruz Unix K         | UNIX BSD           |
| UCSCL     | U Calif Santa Cruz Unix L         | UNIX BSD           |
| UCSCM     | U Calif Santa Cruz Unix M         | UNIX BSD           |
| UCSCVM    | U Calif Santa Cruz VM             | VM/SP              |
| PORTAL    | U Calif Santa Cruz VM             | VMS                |
| UCSCO     | U Calif Santa Cruz VM             | SUN OS             |
| UCCVMA    | U Calif System-wide Admin         | VM/HPO             |
| UCICP6    | U California Comptng Fac          | CP6                |
| BUCLLN11  | U Cath Louvain                    | VM/SP HPO R4 2     |
| UCF1VM    | U Central Florida                 | VM/SP              |
| UCFCS     | U Central Florida Comp Sci Dept   | UNIX BSD           |
| UCHIMVS1  | U Chicago Computation Ctr         | MVS/SP             |
| UCHISTEM  | U Chicago Crewe Laboratory        | VM/SP              |
| UCCCMVS   | U Cincinnati                      | MVS/SP             |
| UCCCV1    | U Cincinnati                      | VM/SP              |
| IRUCCIBM  | U College Cork                    | VM/SP              |
| IRLEARN   | U College Dublin                  | VM/HPO RELEASE 4 2 |
| COLORADO  | U Colorado Boulder Comp Svcs      | VMS                |
| COLOPHYS  | U Colorado Boulder Physics        | VMS                |
| UCONNMVS  | U Connecticut                     | MVS                |
| UCONNVM   | U Connecticut                     | VM/SP HPO          |
| DKUCCC11  | U Copenhagen Comp Ctr             | IBM VM/SP R5       |
| BMSUEM11  | U de l'Etat Belgium               | VM/SP R5           |
| BLIULG11  | U de Liege                        | VM/SP HPO R4 2     |
| BLIULG12  | U de Liege                        | VM/SP R4           |
| BLIULG13  | U de Liege Belgium                | VM/SP R5           |
| PTEARN    | U de Lisboa                       | IBM VM/SP          |
| IPGUNIV   | U degli Studi di Perugia          | IBM VM/SP R3       |

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| UDCVM    | U Dist Columbia Comp Ctr         | VM/SP              |
| UDCVAX   | U Dist Columbia VAX              | VMS                |
| DDOINF6  | U Dortmund CC Dept               | UNIX 4 2 BSD       |
| DERRZE1  | U Erlangen                       | IBM VM/SP R3       |
| UFGATE   | U Florida CIRCA                  | VMS                |
| UFPINE   | U Florida CIRCA                  | VMS                |
| UFENG    | U Florida Col Engr               | VM/SP              |
| UFFSC    | U Florida Faculty Sup Ctr        | VM/SP              |
| CGEUGE52 | U Geneva                         | DEC VMS            |
| HGRRUG0  | U Groningen                      | NOS                |
| HGRRUG5  | U Groningen                      | VMS 4 2            |
| UOGUELPH | U Guelph VM/CMS                  | VM/SP              |
| UOGVAX2  | U Guelph, CIS                    | UNIX BSD           |
| DHVMHH1  | U Hannover                       | IBM VM/SP R2 01    |
| UHCCUX   | U Hawaii Comp Ctr                | ULTRIX             |
| UHPLATO  | U Hawaii Comp Ctr                | NOS                |
| UHCCMVS  | U Hawaii Comp Ctr, Hon, USA      | MVS/SP 1.3.5       |
| UHCCVM   | U Hawaii Comp Ctr, Hon, USA      | VM/SP/HPO 4.2      |
| UHCCVX   | U Hawaii Comp Ctr, Hon, USA      | VMS                |
| DHDTRN1  | U Heidelberg Immunol Inst        | IBM VM/SP HPO R4 2 |
| FINUHC   | U Helsinki Phys Comp             | VMS                |
| UHUPVM1  | U Houston Comp Ctr               | VM/SP              |
| UHNIX1   | U Houston Comp Ctr               | ATT                |
| UHNIX2   | U Houston Comp Ctr               | ATT                |
| UHRCC    | U Houston Research Comp Ctr      | VMS                |
| UHRCC2   | U Houston Research Comp Ctr 2    | VMS                |
| IDUI1    | U Idaho                          | VM/SP              |
| NCSAVMS  | U Ill Ntl Crt Sprcomp Appl       | VMS                |
| NCSAVMSA | U Ill Ntl Ctr Sprcomp Appl       | VMS                |
| NCSAVMSB | U Ill Ntl Ctr Sprcomp Appl       | VMS                |
| UIUCNPL  | U Ill- Urb-Champ Nuc Phy Lab     | VMS                |
| UICVM    | U Illinois Chicago               | VM/SP              |
| UICMVS   | U Illinois Chicago               | MVS/SP             |
| UICPHY   | U Illinois Chicago               | VMS                |
| UICVM2   | U Illinois Chicago               | VM/SP              |
| UICVMC   | U Illinois Chicago AISS/ACC      | VM/SP              |
| UICMVSA  | U Illinois Chicago AISS/ACC      | MVS/XA 2.1.5       |
| UIUCMRL  | U Illinois Comp Ctr              | VMS                |
| UIUCHEPA | U Illinois High Energy Physics   | VMS                |
| UIUCHEPB | U Illinois High Energy Physics   | VMS                |
| UIUCVME  | U Illinois Urbana-Cham Comp Svcs | VM/SP              |
| UIAMVS   | U Iowa                           | MVS/SP             |
| UIAECE   | U Iowa                           | UNIX BSD           |
| UIAPRB   | U Iowa                           | PRIMOS             |
| UKANVM   | U Kansas Comp Srvs               | VM/SP              |
| UKANMED  | U Kansas Med Ctr Dpt Info Sys    | VM/SP              |
| DKAKFK51 | U Karlsruhe Rechenzentrum        | VMS                |
| DKAUNI14 | U Karlsruhe Rechenzentrum        | IBM VM/SP R4       |
| UKCC     | U Kentucky Comp Ctr              | VM/SP              |
| UKCCB    | U Kentucky Comp Ctr              | VM/SP              |
| UKCCS    | U Kentucky Comp Ctr              | VM/SP HPO          |
| UKWANG   | U Kentucky DP Ctr                | WANG VS            |
| UKMA     | U Kentucky Math Sci              | UNIX BSD           |
| DKIUNI0  | U Kiel                           | TOPS-10            |
| LAVALVM2 | U Laval                          | VM/SP              |
| HLERUL53 | U Leiden                         | VMS 4 5            |
| HLERUL2  | U Leiden                         | MVS/SP 1 3         |
| HLERUL5  | U Leiden                         | VMS 4 1            |
| HLERUL51 | U Leiden                         | VMS 4 1            |
| HLERUL54 | U Leiden Medical Infor           | VMS 4 1            |
| HMARL5   | U Limburg                        | VMS 4              |
| ULKYVM   | U Louisville Ctrl Comp           | VM/SP              |
| ULKYVX02 | U Louisville VAX Cluster         | VMS                |
| ULKYVX04 | U Louisville VAX Cluster         | VMS                |
| ULKYVX05 | U Louisville VAX Cluster         | VMS                |
| ULKYVX03 | U Louisville VAX Cluster         | VMS                |
| ULKYVX06 | U Louisville VAX Cluster         | VMS                |
| ULKYVX07 | U Louisville VAX Cluster         | VMS                |
| MECAN1   | U Maine Computer Appl Network    | VMS                |
| MAINE    | U Maine Computing Center         | VM/SP              |

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| PORTLAND | U Maine Portland Comp Ctr            | VM/SP          |
| UOFMCC   | U Manitoba Comp Ctr                  |                |
| UOFMCCX  | U Manitoba Comp Ctr                  | VM             |
| DMARUM8  | U Mannheim                           | SIEMENS BS2000 |
| UMDARS   | U Maryland College Pk ARS Lab        | VMS            |
| UMDARS1  | U Maryland College Pk ARS1 Lab       | VMS            |
| UMCINCOM | U Maryland College Pk Comp Sci Ctr   | VMS            |
| UMDB     | U Maryland College Pk Comp Sci Ctr   | VM/SP          |
| UMDC     | U Maryland College Pk Comp Sci Ctr   | VM/SP          |
| UMDT     | U Maryland College Pk Comp Sci Ctr   | VM/SP          |
| UMD2     | U Maryland College Pk Comp Sci Ctr   | OS 1100        |
| UMBC1    | U Maryland Comp Info Serv            | VMS            |
| UMDACC   | U Maryland Computer Admin Compt Ctr. | VM/SP          |
| UMDD     | U Maryland Computer Science Ctr      | VM/SP          |
| UMES     | U Maryland Eastern Shore             | VM/SP          |
| UMDENP   | U Maryland Experimental Nuclear Phys | VMS            |
| UMDHEP   | U Maryland High Energy Physics       | VMS            |
| UMAB     | U Maryland Medical School            | VM/SP          |
| UMUC     | U Maryland U College                 | VM/SP          |
| UMASSVM  | U Mass Sch of Engineering            | VM/SP          |
| UMASS    | U Massachusetts at Amherst           | NOS 2.5.2      |
| DGOGWD01 | U Max-Planck-Ges Goettingen          | OS 1100        |
| UMICHUB  | U Mich Comp Ctr.                     | MTS            |
| UMICHUM  | U Mich Comp Ctr.                     | MTS            |
| UMDSCVM  | U Mich Data Sys Ctr VM               | VM/SP          |
| UMDSCXA  | U Mich Data Sys Ctr XA               | MVS/XA 2.2     |
| UMIPHYS  | U Mich HEP                           | VMS            |
| UMINN1   | U Minnesota St. Paul Comp Ctr        | VM/SP          |
| UMMVSA   | U Missouri Central Facil             | MVS/SP         |
| UMVMA    | U Missouri Central Facil             | VM/SP          |
| UMCVMB   | U Missouri Columbia                  | VM/HPO         |
| UMCECN01 | U Missouri Columbia                  | VMS            |
| UMCCSL1  | U Missouri Columbia Campus - CC      | VMS            |
| UMKCVAX1 | U Missouri Kansas City               | VMS            |
| UMKCVAX2 | U Missouri Kansas City               | VMS            |
| UMRVMC   | U Missouri Rolla                     | VM/SP          |
| UMRVMA   | U Missouri Rolla Campus              | VM/SP          |
| UMRVMB   | U Missouri Rolla Campus              | VM/HPO5        |
| UMRUNIXA | U Missouri Rolla Campus              | BSD 4.3        |
| UMSLVMA  | U Missouri St. Louis Campus          | VM/SP          |
| UMSLVMB  | U Missouri St. Louis Campus          | VM/SP          |
| UMSLVAXA | U Missouri St. Louis Campus          | VMS            |
| UMKCVAX3 | U Missouri Truman                    | VMS            |
| UDEM     | U Moncton                            | MPE V          |
| UNCICHEM | U N Carolina ACS                     | VMS            |
| UNCVM1   | U N Carolina ACS                     | VM/SP          |
| UNCVX1   | U N Carolina ACS                     | VMS            |
| UNCSPHV3 | U N Carolina Sch Publ Health         | VMS            |
| UNCSPHVX | U N Carolina Sch Publ Health         | VMS            |
| UNCSPHV2 | U N Carolina Sch Publ Health         | VMS            |
| UNLARS   | U Nebr-Lincoln Agric Res Srv         | VMS            |
| UNLAMC   | U Nebr-Lincoln Amer Math Comp.       | VMS            |
| UNLASVAX | U Nebr-Lincoln Arts & Sciences       | VMS            |
| UNLVAX4  | U Nebr-Lincoln CALMIT Lab            | VMS            |
| UNLCDC2  | U Nebr-Lincoln Comp Res Ctr          | NOS/VE         |
| UNLVAX1  | U Nebr-Lincoln Comp Res Ctr          | VMS            |
| UNLENVAX | U Nebr-Lincoln Eng. Coll             | VMS            |
| UNLVAX3  | U Nebr-Lincoln Eng. Coll             | VMS            |
| UNLPDVAX | U Nebr-Lincoln Print & Dup           | VMS            |
| UNLTCVAX | U Nebr-Lincoln Teach. Coll           | VMS            |
| UNLADVAX | U Nebr-Lincoln VP Acad. Affairs      | VMS            |
| UNLVM    | U Nebraska Comp Svcs                 | VM/SP/HPO      |
| UNLCDC3  | U Nebraska Lincoln Comp Ctr          | NOS            |
| UNBMVS1  | U New Brunswick                      | MVS/XA         |
| UNBVM1   | U New Brunswick                      | VM/SP 5        |
| UNMB     | U New Mexico Comp Ctr                | VMS            |
| UNFVM    | U North Florida Comp Svcs            | VM/SP          |
| IRISHMVS | U Notre Dame Comp Ctr                | MVS/SP         |
| UNDHEP   | U Notre Dame High Ener Phys          | VMS            |
| IRISHVM  | U Notre Dame PC Lab                  | VM/SP          |

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| IRISHVM2 | U Notre Dame PC Lab                       | VM/SP        |
| IRISHVX2 | U Notre Dame Physics Dept                 | VMS          |
| NDRADLAB | U Notre Dame Radiation Lab                | VMS          |
| ALASKA   | U of Alaska Comp Net                      | VMS          |
| BANUIA51 | U of Antwerp                              | VMS          |
| ARIZVM1  | U of Arizona CCIT IBM                     | VM           |
| ARIZJVAX | U of Arizona CCIT VAX                     | VMS          |
| ARIZRVAX | U of Arizona CCIT VAX                     | VMS          |
| UBCMTSA  | U of BC Admin System                      | MTS          |
| UCSFC450 | U of California San Francisco             | ULTRIX 32M   |
| UCSFFFFT | U of California San Francisco             | ULTRIX       |
| UCSFUSE  | U of California San Francisco             | UNIX         |
| HGRRUG52 | U of Groningen                            | VMS 4 2      |
| UKAG     | U of KY Agri Data Ctr                     | VM/SP        |
| CCOL     | U of Ky Community Colleges                | VM/SP        |
| HLERUL56 | U of Leiden DIOS                          | VMS 4 2      |
| HLERUL55 | U of Leiden DIOS                          | VMS          |
| UC780    | U of Maryland                             | VMS          |
| ECSVAX   | U of NC Gen'l Admin Cent Office - Educat. | UNIX BSDrvs  |
| OREGON1  | U of O CC                                 | VM/SP        |
| UOTELG01 | U of Ottawa Elec Eng                      | VMS          |
| UTORDAIS | U of T DAIS                               | VMS          |
| UTKVX2   | U of Tennessee                            | VMS          |
| UTKVX3   | U of Tennessee Computing Center           | VMS          |
| WATLAGER | U of Waterloo, EERC                       | VMS          |
| WISCAGE  | U of Wis, Inst on Aging                   | VMS          |
| DOLUNI1  | U Oldenburg                               | IBM VM/SP R4 |
| DOSUNI   | U Osnabrueck                              | CGK BS 3     |
| UOTTAWA  | U Ottawa Computer Ctr                     | VM/HPO       |
| UOTCSI1  | U Ottawa Computer Sci Dept                | UNIX         |
| UOTCSI2  | U Ottawa Computer Sci Dept                | UNIX         |
| UOTADM01 | U Ottawa Faculty of Admin                 | VMS          |
| IPACUC   | U Palermo                                 | VM/SP        |
| PENNDRLN | U Penn DRL Comp Facil                     | VM/SP        |
| PENNDRLS | U Penn DRL Comp Facil                     | VM/SP HPO    |
| PENNLRSM | U Penn Matter Lab                         | VMS          |
| PENNHEP1 | U Penn Physics                            | VMS          |
| PITTVMS  | U Pittsburgh Comp Info Sys                | VMS          |
| PITTUNIX | U Pittsburgh Comp Info Sys                | ULTRIX       |
| EMDUPM11 | U Poli Madrid Ctr Calc                    | IBM VM/SP R4 |
| UPEI     | U Prince Edward Island                    | VMS          |
| UQAM     | U Quebec Montreal                         | VM/SP        |
| UREGINA1 | U Regina                                  | VM/SP        |
| UREGINAV | U Regina                                  | VMS 4 5      |
| UREGINA2 | U Regina Dept Comp Services               | UNIX BSD     |
| UORCHEM  | U Rochester Chemistry VAX                 | VMS          |
| UORVM    | U Rochester Comp Ctr                      | VM/SP        |
| UORDB2   | U Rochester Comp Ctr                      | VMS          |
| UORHBV   | U Rochester Comp Ctr                      | VMS          |
| UORJVN   | U Rochester Comp Ctr                      | VMS          |
| UORKV    | U Rochester Comp Ctr                      | VMS          |
| UORKV2   | U Rochester Comp Ctr                      | VMS          |
| UORMVS   | U Rochester Comp Ctr                      | MVS/SP       |
| UORUNIX  | U Rochester Comp Ctr                      | UNIX BSD     |
| UORDBV   | U Rochester Computing Ctr                 | VMS          |
| UORGSM   | U Rochester Grad Sch Mngmnt               | VM/SP        |
| UORHEP   | U Rochester High Energy Physics           | VMS          |
| UOROPT   | U Rochester Institue of Optics            | VMS          |
| SASK     | U Saskatchewan                            | DEC VMS 4 7  |
| BAGAMCOK | U South Carolina Bus College              | VM/SP        |
| UNIVSCVM | U South Carolina Comp Svcs                | VM/SP        |
| KYLARA   | U Southern Calif                          | VMS          |
| MIRRM    | U Southern Calif                          | VMS          |
| ZAPHOD   | U Southern Calif                          | VMS          |
| GEO      | U Southern Calif                          | VMS          |
| BMSR     | U Southern Calif Biomed Simul Res         | VMS          |
| RAMOTH   | U Southern Calif Chemistry Dept           | VMS          |
| JAXOM    | U Southern Calif Eng Dept                 | VMS          |
| MOUSE    | U Southern Calif Eng Dept                 | VMS          |
| PERN     | U Southern Calif Engineering Sch          | VMS          |



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| SC       | U Southern Calif Engineering Sch        | VMS            |
| USCVM    | U Southern California                   | VM/HPO         |
| USMVAX   | U Southern Maine Portland Comp Ctr      | UNIX           |
| DSORUS1I | U Stuttgart                             | IBM VM/SP R2 1 |
| DSORUS1P | U Stuttgart                             | IBM VM/SP R2 1 |
| DS0IKE51 | U Stuttgart Inst Kernenergetik          | VMS            |
| DS0MPA51 | U Stuttgart Materialpruef               | DEC VMS 4 7    |
| DSORUS51 | U Stuttgart Rechenzentrum               | VMS            |
| DSORUS0  | U Stuttgart, Germany                    | NOS            |
| UTCVM    | U Tenn at Chatta Ctr of Excel           | VM/SP          |
| UTCMUSIC | U Tenn at Chatta MUSIC Sys              | MUSIC/SP       |
| UTKVX1   | U Tennessee                             | VMS            |
| UTKSM1   | U Tennessee                             | VMS            |
| UTADNX   | U Texas Austin Comp Ctr                 | VMS            |
| UTA3081  | U Texas Austin Comp Ctr                 | VM/SP          |
| UTA4341  | U Texas Austin Comp Ctr                 | VM/SP          |
| UTGATE   | U Texas Austin Comp Ctr                 | VMS            |
| UTNET    | U Texas Austin Comp Ctr                 | VMS            |
| UTAIVC   | U Texas Austin Comp Ctr                 | VMS            |
| UTAIV1   | U Texas Austin Comp Ctr                 | VMS            |
| UTAIV2   | U Texas Austin Comp Ctr                 | VMS            |
| UTAIV3   | U Texas Austin Comp Ctr                 | VMS            |
| UTAIV4   | U Texas Austin Comp Ctr                 | VMS            |
| UTADP    | U Texas Austin Data Proc. Sys           | MVS/XA         |
| UTAPHY   | U Texas Austin Physics Dept             | VMS            |
| UTDALVM1 | U Texas Dallas Acad Comp Ctr            | VM/SP          |
| UTEPA    | U Texas El Paso CC                      | VM/SP          |
| UTEP     | U Texas El Paso Comp Ctr                | VM/SP          |
| UTSA4381 | U Texas San Antonio                     | OS/VS1         |
| UTSAVM1  | U Texas San Antonio Comp Res            | VM/SP          |
| UOFT01   | U Toledo                                | VM/SP          |
| UOFT02   | U Toledo                                | VMS            |
| NORUNIT  | U Trondheim                             | IBM VM/SP R4   |
| DTUZDV2  | U Tubingen ZDV BASF                     | MVS/SP         |
| DTUZDV1  | U Tubingen Zent Datenverar              | IBM VM/SP R3   |
| UTHSCSA  | U TX Hlth Sci Ctr Comp Resrcs           | VMS            |
| SEUMDC01 | U UME\$                                 | CDC NOS 2 3    |
| HUTRUU0  | U Utrecht                               | AOS/VE         |
| HUTRUU51 | U Utrecht Neth                          | VMS 4 6        |
| UVUNIX   | U Victoria UNIX                         |                |
| UVPHYS   | U Victoria VAX                          |                |
| UVVM     | U Victoria VM                           | VM/SP          |
| VIRGINIA | U Virginia Acad Computing               | NOS            |
| UWACDC   | U Washington Acad Comp Ctr              | NOS            |
| UWAV1    | U Washington Acad Comp Ctr VAX1         | VMS            |
| UWAV2    | U Washington Acad Comp Ctr VAX2         | VMS            |
| UWAV3    | U Washington Acad Comp Ctr VAX3         | VMS            |
| UWAV4    | U Washington Acad Comp Ctr VAX4         | VMS            |
| MAX      | U Washington Acad Comp Srvs             | VMS            |
| UWAVM    | U Washington Academic Comp Ctr          | VM/SP          |
| UWAIS1   | U Washington Admin Data Proc            | VM/SP HPO      |
| UWAMVS1  | U Washington Admin Data Proc            | MVS/SP         |
| UWACHEM  | U Washington Chemistry VAX              | VMS            |
| UWASH    | U Washington Cmptng. & Commun           | VM/SP          |
| SAAM     | U Washington Ctr for Bioeng.            | VMS            |
| CPAC     | U Washington Ctr for Process Analy Chem | VMS            |
| UWAEE    | U Washington Electrical Engr            | VM/SP          |
| UWAENG   | U Washington Electrical Engr            | VM/SP          |
| UWALOCKE | U Washington Locke Comp Ctr             | VMS            |
| UWAPHAST | U Washington Physics VAX                | VMS            |
| WATACS   | U Waterloo Adv Control Sys              | VM/SP          |
| WATACO   | U Waterloo Arts Comp Off                | VMS            |
| WATDCS   | U Waterloo Comp Svcs                    | VM/SP          |
| WATCSG   | U Waterloo Comp Sys Grp                 | VM/SP          |
| WATDCSU  | U Waterloo Dept Comp Svcs               | UNIX BSD       |
| WATMTA   | U Waterloo Dept Comp Svcs               | VMS            |
| WATSCI   | U Waterloo Facil Science                | VMS            |
| WATMAD   | U Waterloo Mapping Analysis & Design    | VMS            |
| WATER    | U Waterloo Math/ICR                     | UNIX           |
| WATMNET  | U Waterloo MICRONET                     | VM/SP          |

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| UWF      | U West Fla Comp Ctr            | VM/SP                 |
| UWOCC1   | U Western Ontario              | VM/SP                 |
| WINDSOR1 | U Windsor                      | VM/SP                 |
| WISCPSLB | U Wisconsin Dept Physics       | VMS                   |
| WISCMAC1 | U Wisconsin Madison Comp Ctr   | VMS                   |
| WISCPSLA | U Wisconsin Phys Sci Lab       | VMS                   |
| WISCPSLC | U Wisconsin Physical Sci Lab   | VMS                   |
| DW0URZ0  | U Wuppertal HRZ                | CDC NOS 2 3           |
| WYOCDC1  | U Wyoming                      | NOS                   |
| UWYO     | U Wyoming                      | VMS                   |
| DHBRRZ41 | U. Bremen                      | SIEMENS BS3000 MSP 20 |
| FRUTC51  | U.T.C. Compiègne, France       | DEC VMS               |
| DHDUB1   | UB Heidelberg, Germany         | IBM VM/SP R4          |
| UCLASAUP | UCLA - Arch and Urban Plng     | VM/SP                 |
| UCLACH   | UCLA Chem Dept.                | VMS                   |
| UCLAUE   | UCLA Crystallog. Res.          | VMS                   |
| UCLASTRO | UCLA Department of Astronomy   | VMS                   |
| UCLAPH   | UCLA Dept. of Physics          | VMS                   |
| UCLAHEP  | UCLA High Energy Physics       | VMS                   |
| UCLAIEPI | UCLA IE Physics                | VMS                   |
| UCLASP   | UCLA Space & Plasma Physics    | VMS                   |
| UCLASS   | UCLA Space Science             | VMS                   |
| SBITP    | UCSB Inst Theor Physics        | VMS                   |
| UCSFCOPE | UCSF Clinic for Lab Medicine   | ULTRIX                |
| BANUFS11 | UFSIA, Antwerpen, Belgium      | VM/SP                 |
| BANUIA52 | UIA Antwerpen                  | VMS 4 5               |
| UIUCVMC  | UIUC - ENGR                    | VM/SP                 |
| UIUCVMD  | UIUC _ CSO                     | VM/SP                 |
| BBRBFU01 | ULB/VUB                        | NOS                   |
| BLIULG14 | ULG, Liege, Belgium            | VM/SP R5              |
| BLIULG15 | ULG, Liege, Belgium            | VM/SP R5              |
| SEUMDC51 | UMDAC Umea, Sweden             | DEC VMS               |
| GRATHUN1 | UNATH, ATHENS, GREECE          | NOS 2 5.2 (678/670)   |
| UNC      | UNC Comp Ctr                   | MVS/SP                |
| UNCCVM   | UNCC Compt. Srvs. VM           | VM/SP                 |
| GRCRUN11 | UNCR Heraklion, Crete, Greece  | VM/SP                 |
| GRCRVAX1 | UNCR, Heraklion, Crete, Greece | VMS 4 3               |
| FRUNES21 | UNESCO                         | MVS/SP                |
| DBTHRZ5  | Uni Bayreuth RZ, Germany       | DEC VMS 4 6           |
| DERDBS5  | Uni Erlangen                   | VMS                   |
| DFRRUF1  | UNI Freiburg, Germany          | IBM VM/SP HPO R4      |
| DGIPIG5  | Uni Giessen Physik, Germany    | DEC VMS 4 5           |
| DHDURZ1  | Uni Heidelberg                 | IBM VM/SP R5          |
| DKAUNI5T | Uni Karlsruhe                  | VMS                   |
| DKAUNI0P | Uni Karlsruhe (IPF), Germany   | PRIMOS REV. 20.0.4    |
| DKAUNI0I | Uni Karlsruhe (IRA), Germany   | UNIX 4 3 BSD          |
| DKAUNI12 | Uni Karlsruhe, Telematik       | IBM VM/SP R3          |
| DMZUK1   | Uni Klinik Mainz, Germany      | IBM VM/SP R5 0        |
| DK0RRZK1 | Uni Koeln, Germany             | IBM VM/SP R4          |
| DKNKURZ1 | Uni Konstanz, Germany          | IBM VM/SP R5          |
| HLERUL57 | Uni Leiden                     | VMS 4 5               |
| HLERUL58 | Uni Leiden, Netherlands        | VMS 4 5               |
| HLERUL5I | Uni Leiden, Netherlands        | SUN OS 3 5            |
| DMSWWU0X | Uni Muenster, Germany          | IBM IX/370            |
| DMSWWU5P | Uni Muenster, Kernphysik       | VMS                   |
| HROEUR1  | Uni Rotterdam, Netherlands     | VM/SP R4 1            |
| HROEUR51 | Uni Rotterdam, Netherlands     | VMS 4                 |
| CSGHSG52 | Uni St Gallen, Switzerland     | DEC VMS               |
| CSGHSG53 | Uni St Gallen, Switzerland     | DEC VMS               |
| DS0IND5  | Uni Stuttgart, Germany         | DEC VMS 4.4           |
| DS0ITA51 | Uni Stuttgart, Germany         | DEC VMS 4 6           |
| DS0RUS52 | Uni Stuttgart, Germany         | DEC VMS 4 5           |
| DS0RUS54 | Uni Stuttgart, Germany         | DEC VMS 4 5           |
| DS0MSV1  | Uni Stuttgart, Germany         | IBM VM/SP R4          |
| DS0SYN51 | Uni Stuttgart, Germany         | DEC VMS 4 6           |
| DS0IFU56 | Uni Stuttgart, Germany         | DEC VMS 4 6           |
| DS0IFF5  | Uni Stuttgart, Germany         | DEC VMS 4 2           |
| DTUMED1  | Uni Tuebingen, Med. Rechenzent | IBM VM/SP             |
| HENTHT51 | Uni Twente                     | VMS 4                 |
| HUTRUU52 | Uni Utrecht, Netherlands       | VMS 4 6               |

|          |                                            |                       |
|----------|--------------------------------------------|-----------------------|
| HUTRUU53 | Uni Utrecht, Netherlands                   | VMS 4 4               |
| CNEDCU51 | Uni. Neuchatel, Switzerland                | DEC VMS               |
| DKARH01  | UNI-C, Aarhus, Denmark (CDC)               | CDC NOS 2 4.1-630/628 |
| DKARH02  | UNI-C, Aarhus, Denmark (VAX)               | DEC VMS 4 4           |
| DANPOST  | UNI-C, Aarhus, Denmark (VAX)               | ULTRIX                |
| DKEARN   | UNI-C, Lyngby, Denmark (IBM)               | IBM VM/SP HPO R4 2    |
| NEUVM1   | UNI-C, Lyngby, Denmark (IBM)               | IBM VM/SP HPO R4 2    |
| DKUNIL51 | UNI-C, Lyngby, Denmark (VAX)               | DEC VMS 4 5           |
| NEUMVS1  | UNI-C, Lyngby, Denmark (AMDAHL)            | IBM MVS/XA            |
| USUHS    | Uniformed Svrs Univ of Health Sci          | VMS                   |
| UNION    | Union College                              | VNS                   |
| DBNINF5  | Univ Bonn Informatik                       | VMS                   |
| UCLARUAC | Univ Calif Los Angeles UCLA/OAC            | VMS                   |
| UCCVMB   | Univ Calif System-wide Admin               | VM/HPO                |
| UCLAAIS  | Univ California LA AIS                     | MVS/XA                |
| EMDUCM11 | Univ Complutense de Madrid                 | VM/SP                 |
| UCHCECVM | Univ de Chile CEC                          | VM/SP                 |
| UCHDCI01 | Univ de Chile DESECI                       | VM/SP                 |
| CFRUNI51 | Univ de Fribourg                           | DEC VMS 4 4           |
| USACHVM1 | Univ de Santiago de Chile                  | VM/SP                 |
| UTALCAVX | Univ de Talca                              | VMS                   |
| DDORUD81 | Univ Duesseldorf                           | SIEMENS BS2000 V8 0   |
| UGAIBM1  | Univ Georgia                               | MVS/JES3              |
| UGA205   | Univ Georgia                               | VSOS                  |
| LAVALVX1 | Univ Laval                                 | VMS                   |
| LAVALMU1 | Univ Laval Music Sys                       | MUSIC/SP              |
| DMZRZU71 | Univ Mainz                                 | BULL MULTICS MR 11R   |
| DMSWWU1C | Univ Muenster, Germany                     | IBM VM/SP HPO R5 0    |
| UNAMVM1  | Univ Nat'l Auto De Mexico                  | VM                    |
| UNBSJ    | Univ New Brunswick St. John                | PRIMOS                |
| NUNO     | Univ New Orleans Admin DP                  | MVS                   |
| UNO      | Univ New Orleans CRC                       | VMS                   |
| ARIZMIS  | Univ of Arizona - MIS Dept                 | VMS                   |
| SOVSET   | Univ of Arizona - Soviet Studies           | VMS                   |
| ARIZEVAX | Univ of Arizona College of Eng. EVAX2      | VMS                   |
| UALR     | Univ of Arkansas Little Rock               | VMS                   |
| UAFSYSA  | Univ of Arkansas Main Camp                 | VM/SP                 |
| UAFSYSB  | Univ of Arkansas Main Camp                 | VM/SP HPO             |
| UAFMUSA  | Univ of Arkansas Main Camp                 | MUSIC/SP              |
| UAMS     | Univ of Arkansas Med Sci                   | VMS                   |
| UBCMTSG  | Univ of BC General Sys                     | MTS                   |
| UBCMTSL  | Univ of BC Library System                  | MTS                   |
| NOBERGEN | Univ of Bergen, Norway                     | IBM VM/SP R5          |
| UNCAEDU  | Univ of Calgary                            | VMS                   |
| UCSCZ    | Univ of California CC Series Z             | VMS                   |
| UCSCCRLP | Univ of California Comp Res Lab Pger       | UNIX                  |
| UCSCCRLV | Univ of California Comp Res Lab Vger       | UNIX                  |
| UCSCCRLI | Univ of California Comp Res Lab VM         | VM/SP                 |
| UCSCCRLJ | Univ of California Comp Res Lab, Jup       | UNIX                  |
| UCSCCRLS | Univ of California Comp. Res Lab Saturn    | UNIX                  |
| UCSCLOA  | Univ of California Lick Observ             | UNIX                  |
| UCSCERIS | Univ of California Physics Bd              | UNIX 4.2              |
| UCSD     | Univ of California San Diego Acad Gatwy Su | SUN UNIX              |
| UCSDMVSA | Univ of California San Diego AdCom Op      | MVS/XA                |
| UCDAVIS  | Univ of California, Davis                  | UNIX                  |
| UCDHEP   | Univ of California, Davis                  | VMS                   |
| UCHASTRO | Univ of Chicago - Astron/Astrophysics      | UNIX                  |
| COLOLASP | Univ of Colorado / LASP                    | VMS                   |
| COLOSPGS | Univ of Colorado - Colorado Springs CS     | VMS                   |
| FARRAND  | Univ of Colorado Boulder - Farrand Hall    | VMS                   |
| CUDENVER | Univ of Colorado Denver                    | VMS                   |
| UCOLMCC  | Univ of Colorado Health Sci Ctr            | VMS                   |
| DAYTON   | Univ of Dayton                             | VMS                   |
| DUCAIR   | Univ of Denver Comptng & Info Res          | VMS                   |
| IFASGNV  | Univ of Florida                            | VMS                   |
| CGEUGE53 | Univ of Geneva                             | DEC VMS               |
| CGEUGE11 | Univ of Geneva                             | IBM VM/SP             |
| CGEUGE54 | Univ of Geneva                             | DEC VMS               |
| UGACDC1  | Univ of Georgia                            | NOS                   |
| UGA      | Univ of Georgia                            | VM/SP                 |

|           |                                            |             |
|-----------|--------------------------------------------|-------------|
| UGABUS    | Univ of Georgia                            | VM/SP       |
| UGAMUSIC  | Univ of Georgia                            | MUSIC/SP    |
| UGAXA     | Univ of Georgia                            | VM/XA/SF    |
| CCQC      | Univ of Georgia                            | VM/SP       |
| SREL      | Univ of Georgia                            | VMS         |
| TIFTON    | Univ of Georgia Coastal Plains Exp Sta     | VM/SP       |
| GRIFFIN   | Univ of Georgia Experiment Station         | VM/SP       |
| HARTFORD  | Univ of Hartford                           | VMS         |
| UHHEPG    | Univ of Hawaii High Enrgy Phys Grp         | VMS         |
| FINUHB    | Univ of Helsinki                           | VMS         |
| ISEARN    | Univ of Iceland                            | VM/SP       |
| IDCSVAX   | Univ of Idaho                              | VMS         |
| UIUCSCS   | Univ of Illinois Chemistry                 | VMS         |
| UICBAL    | Univ of Illinois Chicago Biomolec Analy La | VMS         |
| UKANVAX   | Univ of Kansas VAX Sys                     | VMS         |
| UKPR      | Univ of Kentucky Prim                      | PRIMOS      |
| FINKUO    | Univ of Kuopio                             | VMS         |
| CLSUNI51  | Univ of Lausanne                           | DEC VMS     |
| UMBSKY    | Univ of Mass at Boston                     | VMS         |
| UMBMAP    | Univ of Mass at Boston                     | VMS         |
| UMAECs    | Univ of Mass, Eng. Comp Svrs               | VMS         |
| UMBC2     | Univ of MD, Baltimore Co                   | VMS         |
| UMNACVX   | Univ of Minnesota Acad Comptng             | VMS         |
| UMNACBR   | Univ of Minnesota Acad Comptng             | VMS         |
| UMNACCA   | Univ of Minnesota Acad Comptng             | NOS         |
| UMNACUX   | Univ of Minnesota Acad Comptng             | UMAX 4.2    |
| UMNADMIN  | Univ of Minnesota Admin Info Svcs          | MVS         |
| UMNDUL    | Univ of Minnesota Duluth                   | VMS         |
| UMNHCS    | Univ of Minnesota Health Comp Sci          | VMS         |
| UMNHSNOS  | Univ of Minnesota Health Sci Cmptng Svrs   | NOS         |
| UMNHSNVE  | Univ of Minnesota Health Sci Cmptng Svrs   | NOS         |
| UMNMOR    | Univ of Minnesota Morris                   | VMS         |
| SIMVAX    | Univ of Minnesota Sim Resource             | VMS         |
| UMNSOM    | Univ of Minnesota, Sch of Mgmt             | VM/SP       |
| UMSVM     | Univ of Mississippi                        | VM/SP       |
| UMSMVS    | Univ of Mississippi                        | MVS/SP      |
| UMSNOS    | Univ of Mississippi                        | NOS         |
| UMSVSOS   | Univ of Mississippi                        | VSOS        |
| UMSPHY    | Univ of Mississippi                        | VMS         |
| UNMCM     | Univ of Nebraska Med Ctr                   | VM/HPO      |
| UNOMA1    | Univ of Nebraska Omaha CC                  | VMS         |
| UNOMA2    | Univ of Nebraska Omaha CC                  | VMS         |
| UNEV      | Univ of Nevada Sys CC                      | NOS         |
| UNB       | Univ of New Brunswick                      | MVS/XA      |
| UNHH      | Univ of New Hampshire                      | VMS         |
| UNCVAX1   | Univ of North Carolina CH                  | VMS         |
| UNCG      | Univ of North Carolina Greensboro Acad CC  | VMS         |
| UNTVM1    | Univ of North Texas Comp Ctr               | VM/SP       |
| UNTMUSIC  | Univ of North Texas MUSIC                  |             |
| NTSUVAXA  | Univ of North Texas VAX A                  | VMS         |
| NTSUVAXB  | Univ of North Texas VAX B                  | VMS         |
| UOKMVSA   | Univ of Oklahoma Norman                    | MVS/XA-JES2 |
| UOREGON   | Univ of Oregon Dept. Comp. & Info Scie,    | UNIX BSD    |
| UONEURO   | Univ of Oregon Inst. of Neurosci VAX       | VMS         |
| UOXRAY    | Univ of Oregon Molecular Bio VAX           | VMS         |
| OREGON    | Univ of Oregon VAX 8800                    | VMS         |
| UOTADM02  | Univ of Ottawa                             |             |
| UPRENET   | Univ of Puerto Rico Ed Net                 | VMS         |
| URVAX     | Univ of Richmond                           | VMS         |
| UORNSRL   | Univ of Rochester                          | VMS         |
| SCRANTON  | Univ of Scranton Comp Ctr                  | VMS         |
| SCRVM SYS | Univ of Scranton Comp Ctr                  | VM/SP       |
| UDESVM    | Univ of Sherbrooke                         | VM/SP 4     |
| UDESMA    | Univ of Sherbrooke                         |             |
| UDESMB    | Univ of Sherbrooke                         |             |
| USOUTHAL  | Univ of South Alabama                      | VM/SP       |
| USMCP6    | Univ of Southern Miss                      | CP6         |
| UTCHP1    | Univ of Tennessee - Chatta.                | MPE V/E     |
| UTKVX4    | Univ of Tennessee Comp Ctr VAX4            | VMS         |
| UTKCS1    | Univ of Tennessee Computer Sci Dept        | VMS         |

|          |                                            |              |
|----------|--------------------------------------------|--------------|
| UTMEM1   | Univ of Tennessee, Memphis                 | VMS          |
| UTMEM2   | Univ of Tennessee, Memphis                 | VMS          |
| UTMEM3   | Univ of Tennessee, Memphis                 | VMS          |
| UTARLVM1 | Univ of Texas - Arlington VM               | VM/SP        |
| UTARLACS | Univ of Texas Arlington                    | MVS/SP       |
| UTARLADM | Univ of Texas Arlington                    | MVS/SP       |
| UTARLG   | Univ of Texas Arlington                    | VMS          |
| UTMBEACH | Univ of Texas Med Branch at Galveston      | VMS          |
| UTSW     | Univ of Texas Southwestern Med Ctr Dallas  | VMS          |
| UTHVM1   | Univ of Texas Sys Cancer Ctr               | VM/SP        |
| UTCHPC   | Univ of Texas Sys Ctr for High Perfor Cmpt | VMS          |
| UTARL    | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTDAL    | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTEPD    | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTHOU    | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTHSA    | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTHTYL   | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTMGAL   | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTPB     | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTSA     | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTSYS    | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTTYL    | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTSPH    | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTCCSP   | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTMSI    | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| THENIC   | Univ of Texas Sys Off of Telecom. Srvcs    | VMS          |
| UTHDAL   | Univ of Texas Systems                      | VMS          |
| JPNUTDME | Univ of Tokyo                              | VM/SP        |
| JPNUTINS | Univ of Tokyo - INS                        | OS IV/F4 MSP |
| JPNUTKOM | Univ of Tokyo Coll of Arts & Sci           | VM/SP        |
| JPNISSP  | Univ of Tokyo/Inst for Solid St Phy        | OS IV/F4 MSP |
| UTORCSRI | Univ of Toronto                            |              |
| UTORSCG  | Univ of Toronto                            | VM/SP        |
| UTORSCS  | Univ of Toronto                            | VMS          |
| UTORGPU  | Univ of Toronto                            | SUN BSD      |
| UTORMCL1 | Univ of Toronto                            | VMS          |
| UTORME   | Univ of Toronto Mech Eng                   | UNIX         |
| UTOROCI  | Univ of Toronto OCI                        | VMS          |
| UTORPHYS | Univ of Toronto Physics                    | VMS          |
| JPNTSUKU | Univ of Tsukuba - SIPC                     | DYNIX        |
| TULSA    | Univ of Tulsa                              | CP-6 C01     |
| UTAHCCA  | Univ of Utah CC                            | VMS          |
| UTAHBUS  | Univ of Utah College of Bus CC             | VM           |
| UTAHLIB  | Univ of Utah Marriott Lib                  | VM/SP        |
| UTAHMED  | Univ of Utah Med Sch Scie CC               | VMS          |
| UVMVM    | Univ of Vermont                            | VM/SP        |
| UVMADMIN | Univ of Vermont                            | VM/SP        |
| UVMVAX   | Univ of Vermont                            | VMS          |
| UWAJANUS | Univ of Washington Astro. HST Project      | VMS          |
| UWAGEM   | Univ of Washington Gemini Comptng Facilty  | VM/SP        |
| UWAMATSC | Univ of Washington Materials Sci Comp      | VM/SP        |
| UWAPA2   | Univ of Washington Physics Theory Grp      | VMS          |
| UWOVAX   | Univ of Western Ontario                    | VMS          |
| WINDSOR2 | Univ of Windsor                            | VMS          |
| UWPG02   | Univ of Winnipeg                           | DEC VMS 5 0  |
| WISCCDE  | Univ of Wis., Cntr. Demog.                 | VMS          |
| WISCPHEN | Univ of Wisc Pheno Inst                    | MICROVMS     |
| WISCGPS  | Univ of Wisc, Geog/Polisci Depts           | VMS          |
| UWLAX    | Univ of Wisconsin - La Crosse              | VMS          |
| UWMCSD4  | Univ of Wisconsin - Milwaukee              | UNIX         |
| UWSTOUT  | Univ of Wisconsin - Stout                  | VMS          |
| UWEC     | Univ of Wisconsin Eau Claire               | CP-6 COO     |
| WISCSOC  | Univ of Wisconsin Madison Socio Dept       | VMS          |
| OSHKOSHW | Univ of Wisconsin Oshkosh                  | VMS          |
| WISCMAC3 | Univ of Wisconsin, MACC                    | VMS          |
| HROEUR0M | Univ Rotterdam                             | MUSIC/SP     |
| EBCCUAB1 | Univ. Autonoma de Barcelona                | DEC VMS      |
| IMIBOCCO | Univ. BOCCONI - Milano, Italy              | IBM VM/SP R4 |
| FINUH    | Univ. of Helsinki, Finland                 | VMS 4.5      |
| FINUJO   | Univ. of Joensuu, Finland                  | DEC VMS 4 7  |

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|----------|-----------------------------------------|-----------------------|
| FINTUVM  | Univ. of Turku, Finland                 | IBM VM/SP R5          |
| EBRUPC51 | Univ. Politecnica de Catalunya          | DEC VMS 4 5           |
| EMDICA11 | Univ. Pontificia Comillas, Sp           | DG AOS/VS 6 06        |
| DK0RRZK0 | Univer Koeln Regls Rechenrum            | NOS                   |
| EMDUAHM1 | Universidad Alcalá de Henares           | DG AOS/VS 6 06        |
| EMDUAM12 | Universidad Autonoma Madrid             | IBM VM/SP R4          |
| EMDUAM51 | Universidad Autonoma Madrid             | VAX-VMS 4 7           |
| EB0UB011 | Universidad Barcelona - Spain           | VM/SP                 |
| EBUBECM1 | Universidad Barcelona - Spain           | IBM VM CMS REL 5      |
| ELEULE11 | Universidad de Leon, Spain              | IBM VM/SP R1 2        |
| EOVUOV11 | Universidad de Oviedo - C P.D.          | IBM VM/SP R3 1        |
| IGECUNIV | Universita Genova                       | VM/SP                 |
| IMEUNIV  | Universita Messina                      | IBM VM/SP R3 1        |
| ICSUNIV  | Universita' della Calabria              | VM/SP                 |
| IBGUNIV  | Universita' di Bergamo Italy            | IBM VM/SP R4          |
| IPRUNIV  | Universita' di Parma, Italy             | IBM VM/SP R2          |
| IRMUNISA | Universita' La Sapienza                 | IBM VM/SP R4          |
| IRMECOSA | Universita' La Sapienza                 | IBM VM/SP R3          |
| IRMINGSA | Universita' La Sapienza                 | IBM VM/SP R3          |
| ITNCISCA | Universita' Trento, Italy               | DEC VMS 3 0           |
| DBIUNI11 | Universitaet Bielefeld HRZ              | VM/SP                 |
| DHBRRZ45 | Universitaet Bremen                     | SIEMENS BS3000 MSP 20 |
| DDOHRZ21 | Universitaet Dortmund                   | IBM MVS/SP 1 3.3      |
| DERRZE0  | Universitaet Erlangen                   | CDC NOS 2             |
| DE0HRZ1A | Universitaet Essen                      | IBM VM/SP R4          |
| DGIHRZ01 | Universitaet Giessen                    | NOS                   |
| DHHUNI4  | Universitaet Hamburg, Germany           | SIEMENS BS3000 MSP 20 |
| DHHUNI1  | Universitaet Hamburg, Germany           | VM/SP R5              |
| DMZRZU5P | Universitaet Mainz, Germany             | DEC VMS 4 5           |
| DSIHRZ51 | Universitaet Siegen                     | VMS                   |
| DULRUU51 | Universitaet Ulm, Germany               | DEC VMS 4 5           |
| DHDURZ2  | Universitaets-Rechenzentrum             | IBM MVS/SP 2 1.7      |
| DE0WTZ1A | Universitaetsklinikum Essen             | IBM VM/SP R3          |
| CFRUNI52 | Universite de Fribourg, Switz           | DEC VMS 4 6           |
| CFRUNI53 | Universite de Fribourg, Switz           | DEC VMS 4 6           |
| UMTLVR   | Universite de Montreal                  | VMS V4 6              |
| FRUTRS51 | Universite de Tours                     | VAX VMS               |
| UQUEBEC  | Universite du Quebec                    | VM/CMS 3 1            |
| UQHULL   | Universite Du Quebec A Hull             | VMS                   |
| FRP8V11  | Universite Paris 8                      | VM/SP                 |
| CGEUGE51 | University de Geneve                    | DEC VMS               |
| UNCA205  | University of Calgary Cyber             | VSOS                  |
| UDACSVM  | University of Delaware                  | VM/SP                 |
| UDPLATO  | University of Delaware Off of Instruct. | TeNOS                 |
| USCN     | University of Georgia                   | NOS                   |
| UHVAX1   | University of Houston                   | VMS                   |
| UHVAX8   | University of Houston                   | VMS                   |
| ELROY    | University of Houston                   | VMS                   |
| UHO      | University of Houston                   | VMS                   |
| UHCL2    | University of Houston/CL                | VMS                   |
| UHDVX2   | University of Houston/Downtown          | VMS                   |
| UTKVM1   | University of Tennessee                 | VM/SP HPO             |
| UTOREPAS | University of Toronto                   | VM/SP                 |
| UTORONTO | University of Toronto                   | VM/SP HPO 4 2         |
| UTORMVSB | University of Toronto                   | MVS/XA 2 3            |
| UTORVM   | University of Toronto                   | VM/SP HPO 4 2         |
| UTORMED  | University of Toronto                   |                       |
| UTOROISE | University of Toronto OISE              | VMS                   |
| SEUDAC21 | Uppsala U Data Ctr                      | IBM MVS/SP 1 3.0      |
| SEMAX51  | Uppsala Univ, Sweden                    | DEC VMS               |
| URIMVS   | URI Academic Computer Center            | MVS/SP                |
| URIACC   | URI Academic Computer Center            | VM/HPO5               |
| NCCIBM1  | US EPA                                  | MVS/XA-JES2           |
| USGSRESV | US Geological Survey ISD VAX            | VMS                   |
| GROGHE   | USC - Groghe                            | VMS                   |
| USCMVSA  | USC - System MVSA                       | OS/VS2 MVS/XA         |
| USU      | Utah State U                            | VMS                   |
| UTORCCIE | UTORCCIE                                | VM/SP                 |
| UVSOL    | UVic COMP UNIX                          | SUN OS 3 2            |
| UWAFRODO | UW Radiation Oncology                   | VMS                   |

|          |                                         |                    |
|----------|-----------------------------------------|--------------------|
| UWARITA  | UW San Diego RUAC                       | VMS                |
| VALPO    | Valparaiso Univ                         | AOS                |
| VUENGVAX | Vanderbilt U Engineering Sch            | VMS                |
| VUCTRVAX | Vanderbilt Univ CC                      | VMS                |
| VUCTRVX1 | Vanderbilt Univ CC                      | VMS                |
| VUCTRVX2 | Vanderbilt Univ CC                      | VMS                |
| VUHHCL01 | Vanderbilt Univ HHCL                    | VMS                |
| VULIBS   | Vanderbilt Univ Library                 | IBM/DOS            |
| VUHEP    | Vanderbilt Univ Physics                 | VMS                |
| VANDVM1  | Vanderbilt Univ. A&S                    | VM/SP              |
| VANDVMS1 | Vanderbilt Univ. Physics                | VMS                |
| VASPSY   | Vassar Col Psych and Econ               | VMS                |
| VASSAR   | Vassar College                          | VMS                |
| VASCHU   | Vassar College                          | VMS                |
| VAS780   | Vassar College                          | VMS                |
| VILLVM   | Villanova Univ                          | VM/SP              |
| VUVAXCOM | Villanova Univ                          | VMS                |
| VCUMVS   | Virginia Common U Comp Ctr              | MVS/SP             |
| VCUVM1   | Virginia Common U IBM C.C               | VM/SP              |
| VCUJADE  | Virginia Commonwealth Univ              | VMS                |
| VCURUBY  | Virginia Commonwealth Univ              | VMS                |
| VCCSHOST | Virginia Community Coll Sys             | MVS/JES2           |
| VTCS1    | Virginia Tech (VPI)                     | VMS                |
| VTMATH   | Virginia Tech (VPI)                     | VMS                |
| VTME     | Virginia Tech (VPI)                     | VMS                |
| VTSDA    | Virginia Tech (VPI)                     | VMS                |
| VTVAX3   | Virginia Tech (VPI)                     | VMS                |
| VTVAX5   | Virginia Tech (VPI)                     | VMS                |
| VTVM1    | Virginia Tech (VPI)                     | VM/SP              |
| VTVM2    | Virginia Tech (VPI)                     | VM/SP              |
| VTVM3    | Virginia Tech (VPI)                     | VM/SP              |
| VTHCL    | Virginia Tech (VPI)                     | VMS                |
| VTOPUS   | Virginia Tech (VPI)                     | ULTRIX-32 V2       |
| VTCSVM1  | Virginia Tech (VPI)                     | VM/SP              |
| VTCC1    | Virginia Tech (VPI)                     | VMS                |
| BBRVKI51 | VKI, Rhode-St-Genese, Belgium           | VMS 4 7            |
| VOLCANI  | Volcani Institute                       | DEC VMS 4 5        |
| FINVTT   | VTI, Finland                            | DEC VMS 4 6        |
| JPNWAS00 | Waseda Univ                             | VM/SP              |
| WSUVM1   | Washington State U Comp Ctr             | VM/SP              |
| WSUVMS2  | Washington State Univ - Comp. Srvs Ctr. | VMS                |
| WSUMATH  | Washington State Univ - Math Dept       | VMS                |
| WSUVMS1  | Washington State Univ Comp Serv Ctr     | VMS                |
| WUNET    | Washington U St Louis                   | VMS                |
| WUBLUE   | Washington Univ                         | MUSIC/SP           |
| WUGOLD   | Washington Univ                         | MUSIC/SP           |
| WUGREEN  | Washington Univ                         | MUSIC/SP           |
| WUMS     | Washington Univ Med Sch                 | VMS                |
| WUVMA    | Washington University                   | VM/SP              |
| WUVMC    | Washington University                   | VM/SP              |
| WUVMC    | Washington University                   | VM/SP              |
| WUVMF    | Washington University                   | VM/SP              |
| HDEDH1   | Waterloopkundig Lab , Delft             | VM/SP 4            |
| WAYNEST1 | Wayne State Univ CC                     | VM/SP              |
| WEIZMANN | Weizmann Inst Comp Ctr                  | IBM VM/SP HPO R4 2 |
| WISVMS   | Weizmann Inst Dept of Chem              | DEC VMS 4 3        |
| WISDOM   | Weizmann Inst Dept of Math              | UNIX 4.2 BSD       |
| WESLEYAN | Wesleyan U Net Gate Comp Ctr            | VMS                |
| WESLYN   | Wesleyan University                     | VMS                |
| WCU      | West Chester Univ of PA                 | VM/HPO             |
| WVNMVS   | West Virginia Network                   | MVS/XA             |
| WVNVAXA  | West Virginia Network                   | VMS                |
| WVNVAXB  | West Virginia Network                   | VMS                |
| WVNVN    | West Virginia Network                   | VM/SP              |
| WVNSVC   | West Virginia Network                   | VMS                |
| WVNVMS   | West Virginia Network                   | VMS                |
| WVNET    | West Virginia Network                   | VMS                |
| DMSWWU1A | Westfael Wilhelms-U Muenster            | IBM VM/SP HPO R5 0 |
| DMSWWU2B | Westfael Wilhelms-U Muenster            | IBM MVS/SP 1 3.5   |

|          |                                        |                    |
|----------|----------------------------------------|--------------------|
| TWSUVM   | Wichita State Univ CC                  | VM/SP              |
| WLUCP6   | Wilfred Laurier Univ                   | CP-6               |
| WILLIAMA | Williams College CC                    | VMS                |
| WILLIAMB | Williams College CC Admin VAX Sys      | VMS                |
| WILLIAMS | Williams College Comp Ctr              | VMS                |
| DGOWISO1 | WISO-RZ Uni Goettingen, Germany        | IBM VM/IS R5       |
| WPI      | Worcester Poly Tech EE                 | ULTRIX             |
| IBRDVM1  | World Bank                             | VM/HPO             |
| WSU      | Wright State Univ                      | VMS                |
| AWIWUW11 | WU-Wien                                | IBM VM/SP HPO R4 2 |
| WVNBSC   | WVNET - Bluefield St Col               | VMS                |
| WVNCC    | WVNET - Concord Col                    | VMS                |
| WVNFSC   | WVNET - Fairmont St Col                | VMS                |
| WVNGSC   | WVNET - Glenville St Col               | VMS                |
| WVNNCC   | WVNET - Northern Comm. Col             | VMS                |
| WVNPCC   | WVNET - Parkersburg Comm. Col          | VMS                |
| WVNPSC   | WVNET - Potomac State Col              | VMS                |
| WVNSC    | WVNET - Shepherd Col                   | VMS                |
| WVNSCC   | WVNET - Southern Comm Col              | VMS                |
| WVNWLS   | WVNET - West Liberty St. Col           | VMS                |
| WVNWVIT  | WVNET - West VA Instit of Tech         | VMS                |
| WVNWVSOM | WVNET - West VA Sch of Osteopathic Med | VMS                |
| WVNWVSC  | WVNET - West Virginia St Col           | VMS                |
| XAVIER   | Xavier Univ Acad Comp Ctr              | VMS                |
| YALEMED  | Yale Med Sch - Biomedical Comp Unit    | VMS                |
| YALEADS  | Yale U Admin Data Svcs                 | VM/SP/HPO          |
| YALASTRO | Yale U Astronomy Dept                  | VMS                |
| YALECS   | Yale U Comp Sci Dept                   | UNIX               |
| YALEMVS  | Yale U Computer Ctr                    | MVS/SP             |
| YALEVM   | Yale U Computer Ctr                    | VM/SP/HPO          |
| YALEVMS  | Yale U Computer Ctr                    | VMS                |
| YALPH2   | Yale U HEP2                            | VMS                |
| YALEHEP  | Yale U Physics Lab                     | VMS                |
| YALEZEUS | Yale Univ Med Sch                      | VMS                |
| TRYILDIZ | Yildiz Univ                            | VM/SP R3           |
| YUORION  | York U Admin Stud Environ Sci          | VMS                |
| YUSOL    | York U Comp Sci Fac Sci                | VMS                |
| YUYETTI  | York U Comp Sci Research               | UNIX BSD           |
| YULIBRA  | York U Computing Services              | VMS                |
| YUVULCAN | York U Glendon Coll                    | VMS                |
| YORKVM1  | York University                        | VM/SP              |
| YORKVM2  | York University                        | VM/SP              |
| YUGEMINI | York University                        | VMS                |
| YUVENUS  | York University                        | VMS                |
| YSUA     | Youngstown State Univ                  | MVS/SP             |
| YSUB     | Youngstown State Univ                  | VM/SP              |
| DTUZDV5A | ZDV U Tuebingen                        | VMS                |
| DK0ZA1   | Zentralarch Sozialfors Koeln           | VM/SP              |
| CZHRZU1A | Zurich U                               | IBM VM/SP          |
| CZHRZU2B | Zurich U                               | IBM MVS/SP         |

PENDING NODES AS OF 10/05/88

TOTAL NODES = 3

| Node    | Site                    | System        |
|---------|-------------------------|---------------|
| MHC     | Mount Holyoke Coll      | ULTRIX        |
| RADFORD | Radford Univ            | AOS/VS        |
| WWU     | Western Washington Univ | BERKELEY UNIX |



==Phrack Inc.==

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\*--+^ Phrack World News ^+==\*

Issue Five/Part 5

Compiled and Written By

Knight Lightning  
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Daniel Zigmond: Real Reporter or Freelance FED?

May 20, 1986

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This article in no way endorses one view over the other, but will try to look at evidence and facts pertaining to both of the above statements.

Daniel Zigmond; Wants to write an article on hackers and phreaks, our general social atmosphere, and our side of the story. He IS a contributing editor on the staff of Amiga World Magazine and he has lived at 6735 Forest Glen Road, Squirill Hill, Penn. and had the phone numbers (412)422-1979/7515 for at least 3 years. Reportedly he has accounts on ARPAnet, Private Sector, and Byte Magazine BBS.

He has been on several conferences and been talking to several phreaks across the nation. To name a few: Blue Buccaneer, Cap/N/Crax, Compu-Phreak, Dark Cavalier, Dead Lord, Final Impulse, Holophax Phreaker, Knight Lightning, Ninja NYC, Scan Man, Sigmund Fraud, Slave Driver, The Bootleg, The Clashmaster, The Infiltrator, The Firelord, The Seker, and TUC.

He tapes all his conversations and has tried to get people to call other phreaks on 3-ways in attempts to gain their phone numbers. He did however make some attempts to help Sigmund Fraud after his near bust (see story in this issue).

There are a few extremely odd things about Mr. Zigmond.

1. He wants everyone to send him their codes, extenders, PBXs, diverters, etc. Even if they no longer work. When asked why, he answered that he needed something to show his boss so he wouldn't be turned down because of what would seem to be a b.s. article.

Why doesn't he just make things up? After all he said that the stuff didn't have to be good. His reply to that was that his boss might check a few. Well if they were dead codes or PBXs or whatever then he would be up the creek anyway.

Ok, forgetting about that for a moment, Zigmond also asked that people photocopy their notebooks and send those copies to him and that he would pay the postage and for the photocopies. This of course means he gets your address and at the very least your township and such (that is if you don't leave a return address) from the postmark.

2. He has refused to give out a phone number to reach him at work or at Amiga World. Furthermore, he doesn't plan to have the article in Amiga World, but rather, he has stated that it would be sold to the Washington Post.

Now I talked with people at the Washington Post and they know nothing about this. I spoke with people in several different areas and turned a blank. They didn't even know who Zigmond was.

This leaves 2 possibilities. He either never really had any intention of submitting this article to them or was just sort of running with the mouth in search of glory and attention.

3. A PBX that Sigmund Fraud had found while hacking in a UNIX was given to

Zigmond. It had never been used before, with the exception of a single conference to test it out, and within a week of giving it to Zigmond it was gone.

4. Another biggie is that Zigmond claims that by the time he submits this article in August 1986 (to wherever) that if he gets \$900 for it, he would break even. He is saying this from his phone bills and other expenses on the article.

Now only breaking even after all that time, work, and effort seems a bit worthless to me, why would he do it? You know, they say that fed informants get paid very well, not that I am suggesting that Zigmond is a fed informant.

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Some other stuff that may be interesting to know is that Zigmond insists that he will be getting accounts to Metal Shop Private and Stronghold East when Taran King and Slave Driver have given very strong "no"s. He goes around telling this to people. His phone answering machine gives you less than ten seconds to leave a message, this is perhaps to prevent hacking, but nevertheless annoying.

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Now please everyone take this file in the way it was intended. This is not saying that Daniel Zigmond is helping the feds, he may be completely interested and wanting to learn about our society. From this I gather that he will learn that in the phreak community we try to protect each other from getting busted and that a reporter like him could literally destroy the phreak world if he was working with the feds and left unquestioned and unchecked.

This article is a warning to all who may contact Zigmond to use your own good judgement in dealing with him. I'm sure that once he answers the questions raised in this article then everything will be alright.

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The only other thing I wanted to say is that in general reporters have hurt the phreak/hack world tremendously in the past. They bring too much attention to the phreaks and bring us into the public eye. As a result there has been much more legislation creating news laws against us. Some examples are evident in this very issue of PWN. Blue Buccaneer points out all sorts of things in the new hacking laws article. Remember the new laws about sysops being responsible for the boards? Did you see how that was used in the Teltec busts? It getting incredibly dangerous out there friends, lets try not to make it any worse.

:Knight Lightning

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Defeat Richard Proctor In 4 Easy Steps!

June 10, 1986

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Who is this new investigator Atlanta? What makes him today's newest and possibly greatest threat to the phreak world? The following information concerns an MCI investigator named Richard Proctor, alias; John Proctor.

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Richard Proctor, who also introduces himself to others as John Proctor, is one of the various MCI investigators that now lurk the nation. He is in charge of most of MCI's security/investigation divisions, and is in charge of running the southeast, east coast, and northeast MCI Investigations. He has also been involved with phreaks in the midwest and southwest.

I am not sure of the extent of his "jurisdiction," but all users of MCI should be careful no matter where they are located. Holophax Phreaker and The Infiltrator can personally tell you how he runs the MCI Investigations as they have been under investigation twice to date. Holophax Phreaker is currently still under investigation by Proctor and even by his own local Bell Operating Company (BOC).

The first thing most investigators would do when they find an access code has been abused is to wait until it has a large bill to act upon it (which may never happen). This is because it is unprofitable to the long distance service to try to find and prosecute a person who has made less than \$500.00 worth of calls (depending on the LD service).

Richard Proctor is a very different case. As soon as he finds an access code is being abused, he will take immediate action. The following is the series of events which will take place once Proctor discovers an abused account.

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In the following steps, "you" are the phreaker in question that was making the calls (heaven forbid). The steps listed are for both "you" and the person(s) receiving the illegally made phone calls.

Step 1: Proctor will personally call \*EVERY\* destination number on the account and ask for information on who called them on the date(s) the call(s) were made. If it is a bulletin board, he will contact the sysop by voice or if there is no voice number available, he will send one or more investigators from the nearest MCI Investigations Department to question the sysop. He will ask them for information pertaining to the phreaker. Hopefully, your amnesiac friends will somehow forget all about you and be able to tell Proctor nothing.

Step 2: Proctor waits a couple of days, then he again contacts the person(s) that received calls and says that he has found you and that you have told him that the people "you" had been speaking with also made those calls and that the Proctor will bust the person(s) who were called unless they would like to pay for the calls. (If this part pertains to you, that is if you were the one who received calls and Proctor or any agent said this then, at this point you should contact an attorney as this is telephone harassment, a federal crime committed over an interstate communications carrier, and you could sue MCI or whichever company it involved).

Step 3: If some of the person(s) called by you weren't as amnesiac as you would have liked when Proctor spoke to them and then Proctor calls you or your parents, then you should deny everything that Proctor accuses you of, no matter how many people he says turned you in. Proctor will be lying (one hopes) so deny everything.

Step 4: Proctor will call you again in a couple of days and tell you that you have one last chance to turn yourself in. When you say no again, Proctor will try to scare you by telling you that MCI is going to make an example of you and prosecute to the fullest extent. If Proctor does this, then you know he has no evidence on you or at most, circumstantial evidence.

You might get a couple of calls after that. Keep denying it and make sure you drop out of phreaking for approximately 1 1/2 - 2 months. If you get a call from your local phone company then drop out for at least 6 months to a year. They will most likely put a pen register or a DNR on your line.

Proctor has PhDs in Psychology and Criminal Psychology so be very careful! He can't do anything to you if you follow the above guidelines unless he had a trace put on the account you were using. If that is the case, then he will show up at your door arrest you. Your best bet is to stay away from it entirely. Proctor's home phone is unlisted (of course), but his office number can be obtained from any MCI operator.

Information Provided by  
Holophax Phreaker and The Infiltrator

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#### Quick Notes

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Stronghold East is now running on a new Apple //e thanks to their friends at AMEX. They formally ran SE off of a Franklin Ace. May 3, 1986  
Most recently the hard drive at SE crashed and until they acquire the new ProDos Apple net, they will be running Phlash-Net written by Phlash Gordon.

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Rumor has it that the Apple Wizard was busted for dealing and using coke.

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A guy named the CPTN was busted in Nevada for something pertaining to the Captain Midnight incident. He was also busted for carding and was caught with illegally obtained modems. Info by Death Angel.  
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A member of the Underworld Elite, run by Night Stalker, got busted for calling the White House and making a bomb threat. The Secret Service came to his house and they knew he used illegal extenders to make the calls. This user decided to give them the number and his passwords to the Underworld Elite. He was deleted. Info by Night Stalker, 5/11/86...The Underworld (216)356-9464

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Telenet Bob was busted. The full story appeared in the April issue of 2600 Magazine. Nineteen year old from New Jersey. Name Robert Davenport. \$500 fine, \$890 restitution to AT&T. Info by Sally Ride:::Space Cadet

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Bad Boy In Black has given up BBSing and Phreaking (for the most part) so you probably won't be hearing from him again. He claims he has gotten bored of BBSing and have had little time since the summer is rolling around. Therefore, he decided to give it up all together. Info by [bad boy in black] 5/11/86

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Shooting Shark has also left the phreak world for the more or less same reasons plus the fact that he is going to college. Info by Shooting Shark.

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In Texas, some cop was running a bbs called the Tunnel. No one was busted, but names and handles of those posting illegal codes were collected. The cop has received several death threats.

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The Slayer was busted on April 25, 1986. Reportedly he was visited by agents from Metrophone, MCI, New Jersey Bell, and the FBI. His bust concerned Metro abuse. The Godfather, in Rhode Island, was also linked to this bust as well and as of now has quite the phreak world, but no further information is available on that. Most recently it has been discovered that the Slayer has been hired as a TSPS operator.

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More news on The Sprinter here; after all was said and done, Sprinter plea bargained (as expected) and plead guilty to the charges. He spent 14 days in jail, has a \$2000 fine, 2 years probation, 200 hours community service, and of course those lawyer costs. He at this point has not accepted a job with MicroSoft. Info by Jester Sluggo.

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It has been reported that The Mentor and Crustaceo Mutoid are now writing for a newsletter in California called The Underground Informer.

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The Arabian Knight was busted for conferencing.

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The Guardian Demon (215) was apparently busted for Metrophone abuse, but formal charges have not been brought forth.

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Jester Sluggo has officially retired from all board calling and is now into straight hacking. He will maintain his contacts in the phreak world. Sysops are asked to remove his accounts.

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