



The Adventure

VOLUME 6, NUMBER 1.1, January 1999

4th Quarter Web Stats!

Calendar of Events:

2/6/99 Court-of Honor & Sleep Over
 2/7/99 Scout Sunday \$7.00
 2/27/99 Maple Syrup Festival
 3/6/99 Airforce Museum, Dayton
 3/30/99 Exploring Rappelling Money and Registration
 Forms due to Council
 4/16/99 Exploring Recognition Dinner Registration
 Forms Due to Council
 4/17-18/99 Exploring Rappelling Outing
 4/20/99 Flower Sale Begins
 4/23-25/99 Campout
 5/8/99 Exploring Recognition Dinner
 5/15/99 Garage Sale
 5/30/99 Exploring Canoe Trip Money and Registration
 Forms Due to Council
 6/18-20/99 Exploring Canoe Trip
 6/28-7/31/99 Summer Camp
We might move to the following week. \$175.00
 9/13/99 First Nighter Week
 9/25/99 Award Nominations Due
 10/15/99 Recognition Dinner Money Due
 10/23/99 Venturing Recognition Dinner
 11/2/99 Election Reporting

The 1999 Calendar is still in the planning Stages.

Quote of the Month

Emerson

Nothing good was ever achieved without enthusiasm!

Congratulations

James D. Corder

Congratulations to: Andy P. Drake, Joe Harvey, Nathaniel P. Graham, Ho-Sheng Hsiao, and Thomas R. Lowers for achieving their Red Engineering Cords!

New Courses

James D. Corder

The Basic UNIX For Programmers course will conclude in April. Those that have achieved their Red Engineering Cords will be able to go onto the Intermediate UNIX for Programmers course.

We are not scheduled to take the Engineering Placement Exam again until August. I will try to get permission from the Guild to allow us to take it at the end of April. They are usually extremely kind to us.

It has been said that "True" system administrators [SA] don't program. I tend to agree with this. However, a "REAL" SAs knows how. The SA must understand how to support their programmers, and I bet 99% of the SAs out there have had to generate their own programs to support their needs. I can't tell you how many Java, JumpStart, and SH programs I have written in my life.

It is this need to know how to program that we will be going through 3 levels of UNIX for Programmers before we start UNIX System Administration.



Web Status, For January

Pages	Subject
18866	Bible
14590	Venturing
32107	Scouting
43493	Adventure
119043	Post
14344	Calendar
46697	Members
27502	Adults
7517	Youth
2657	Toadies
14836	Program
889	Project

Venture Code

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

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

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

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

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

Post Finances

The Adventure	-\$75.00
Floor Fund Need	\$2,500.00
On-Hand	\$2,500.00
Electrical Fund	\$2,500.00
On-Hand	\$2,500.00
Room Fund Needed	\$3,800.00
On-Hand	\$0.00
General Fund	\$236.82

Up-an-Coming Crew Expenses

12/01/99 Crew Charter	\$30.00
12/01/99 Crew Insurance	\$175.00
12/31/99 Registration	\$335.00
Monthly The Adventure	\$75.00

Up-an-Coming Member Expenses

06/01/99 Summer Camp	\$175.00
09/01/99 Registration	\$25.00

exp369@post369.columbus.oh.us

Mailing to this reflector grants 369 the uncompensated and unrestricted usage of your mail/posting in its [but not limited to] WebPage, Newsletters, books, flyers, etc.!!!

Our Principals:

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

Our Creed:

Exploring: Enthusiasm, Energy, & Excellence.

Venture Crew 369:

Venture Crew369 was chartered on December 31, 1994 to the Reformation Lutheran Church.

Venture Crew369 specializes in UNIX for Programmers while emphasizing a deep theme of Engineering Computer Information & Science through an Entrepreneurial Spirit. Membership in Venture Crew 369 is open to young men and women between the ages of 14 [and in high school] and not yet 20. Annual Membership fees are \$25

Our Web Page:

<http://post369.columbus.oh.us>

The views in this NewsLetter are strictly those of Venture Crew 369 and they do not necessarily represent the views or opinions of the Reformation Lutheran Church or the Boy Scouts of America and/or the Simon Kenton Council.

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Rick Gauger	Committee Member
Terry Jones	Committee Member
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Dave Scruby	-

Post-Toadies:

Opening	Page
Ian Jones	Toadie
Tyler Skirtich	Toadie
Opening	Toadie

(E)

Eagle Scout



Venturer Crew 369
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We are looking for a new sponsor for The Adventure. Can you help?

Admin Spotting: Deception Tool Kit

Ho-Sheng Hsiao

hshsiao@freenet.columbus.oh.us

From the security grapevine, I've found this neat little tool-kit called "Deception" at <http://all.net/dtk/> The entire package is called DTK. According to the website, the idea is not new. Basically, the DTK fakes security vulnerabilities. Furthermore, any attacks are logged.

For example, a cracker steals the password file and runs a password cracker on it. But this is really a fake password file generated by the DTK to confuse, befuddle, and waste the cracker's time. Other deceptions found on the site include FTP, Sendmail, and portscans.

DTK discourages crackers by wasting their time and effort. Additionally, the DTK serves as a early-warning system. While the cracker trips over the DTK, security monitors receive notices, and can watch an attack in progress. With the newer security vulnerability scans floating around on the net, DTK should keep the lesser-skilled crackers dancing around. However, though I don't specialize in security, I still wonder what the crackers will respond with.

Side Note to "From Unskilled Labor to Unskilled Management"

Ho-Sheng Hsiao

hshsiao@freenet.columbus.oh.us

The Internet not only affected economics, it is also inducing seething changes to culture and politics.

We start with the (contemporary) classic literature such as Gibson's *Neuromancer*, Orwell's *1984*, and Stephenson's *Snow Crash*. Each has, in its own way, influenced current-day technocrats. What is discussed are beyond the post-modern contemplation of feudalism and spiritual loss. These book embraces technology. When Hollywood portrays geeks and nerds as heroes of the day, I think it has entered the mainstream. Writers flock to write about technology-oriented books for the masses, after years of shunning technology and relegating science fiction as popular trash; you know future English professors will hold up technical literature in the classroom to the groans of students. If there are any more Professors or classrooms. There are several internationally accredited virtual colleges; Universities around the world are developing and implementing distance learning programs. Instead of studying madly for American ACT and SAT tests, students in developing nations and around the world has the slim chance to receive a diploma from say... MIT or Harvard.

Let's not forget politicians, even though some of us would like to. A third party candidate has proven an Internet-supported campaign can win. Minnesota governor-elect won against the entrenched Big Media and the "Republicrat Duopoly." And despite being painted as a freak and an incompetent, running a campaign under half a million dollars, he won. Much like how the ten-second media politicians replaced party-machine politicians, we shall see newer generations of Internet politicians displacing the media politicians. Except that the Internet provides an overwhelming choice of candidates, lobbying by the click of the e-mail, and constituents that are not geographically bounded. TV politicians used the ten-second shots to present through a distraction box. The Internet gives you the world. Will we see an internationally-acclaimed, internationally-influential small-town mayor? Possible. Inevitable.

There's lots of benefits to this global social and political commingling. But I'm wary of the price; tanstaaf! lurks around where you don't see it. We're building our own Tower of Babel. Fine, great, awesome, so what are we going to do with it?

Working with PHP

Ho-Sheng Hsiao

hshsiao@freenet.columbus.oh.us

PHP/FI is a script language directly embeddable inside HTML. The authors took a subset of Perl's syntax, cleaned it up, added some features, and shipped it off. The current incarnation is PHP3 (www.php3.org), compiled as an Apache 1.3 module or stand-alone CGI interpreter; it also include interfaces to Oracle, MySQL, mSQL, PostgreSQL, Sybase, Informix, Solid, dBase, LDAP, IMAP, SNMP, mail, dynamic loaders, images (gif, jpeg, png), gzip, and many other functions. It is also turing-complete, meaning that it is a full-fledged language.

Congratulations! You have won the Good People's Choice Award

We have visited your web site and are proud to give you the Good People's Choice Award. This award is very different because the meaning of it is to promote honest, moral and ethical good values on the Internet. When you place the Good People's Choice Award on your web page you are letting others know that you adhere to these principles. This award helps all of us to promote honesty and worthwhile content throughout the Internet.



PHP's greatest strength, though, is that it was designed to create web-based interfaces. CGI variables passed to PHP are automatically converted into variables. PHP supports quoting that allows the developer to switch between HTML code and PHP scripts. PHP has native support for cookies and MD5 hashes. When combined together with those database (and etc.) functions, PHP is an excellent application-server language.

To give people an idea of what PHP is like, I have here a short demo. I was working on a HTML version of a weekly schedule (<http://post369.columbus.oh.us/post.d/members.d/Youth.d/hoshsi.d/weekly.html>). Take a look at the source HTML. I have well over 250 cells; I did not want to sit around typing all those HTML code. Rather, I used PHP to quickly develop it. Here is a commented listing. The embedded PHP code are within the `<?php ?>`

```
<html><head> <title>Weekly Sched-
ule</title> </head><body>
<basefont size=1> <table
width=100%>
<td width=20% valign=bottom> <table
border=1 cellpadding=0
width=100%>
<tr><th>Roles</th>
<th>Goals</th></tr> <?php
## Ok, we've started the Role/Goal
table ## This snippet cre-
ates four table cells, one ##
of them doing a row span.
This is the ## far left
table. ## I used the <pre>
</pre> to force the ## cells
here to stay open. ##
Notice how I used the quot-
ing. I've done ## a regular
"for" loop, but I escaped out
## into HTML mode. So this is
a for loop ## that spits out
HTML code. PHP just looks ##
at the {, sees the HTML code,
and sees ## the ending }
without breaking stride.
for ($x=0; $x<9; $x++) { ?>
<tr><td rowspan=3><pre> </pre></
td> <td><pre> </pre></
td></tr> <tr><td><pre>
</pre></td></tr>
<tr><td><pre> </pre></td></
tr>
<?php
}
?>
</table></td>
<td width=12% valign=bottom> <table
width=100% cellpadding=0>
<tr><th>Weekly Priority</
th></tr>
```

```
<?php
## This is the "Weekly Priorities" ## I
used the same technique as the ##
previous table.
## Here, PHP has smart quoting that ##
reallign shines. I have that ##
<td bgcolor = "" > ## tag, but I
want to conditionally ## set the
background color. This is ## so
that I can avoid using lines. ##
On a nice laser printer, the ##
alternating bands of gray and
white ## is all that I need. ##
Too bad PHP doesn't have "mod".
for ($x=0; $x<26; $x++) { ?>
<tr><td bgcolor= <?php
if (((int)($x/2)*2) == $x) print
"#####"; else print
"#####"; ?> ><pre> </pre></
td></tr>
<?php
}
?>
</table></td>
<td valign=bottom> <table border=0
width=100% cellpadding=0>
<tr><th align=right
width=10>Time</th> <th>Sun</th>
<th>Mon</th> <th>Tue</th>
<th>Wed</th> <th>Thr</th>
<th>Fri</th> <th>Sat</th>
<?php
## This table uses the same ## tech-
niques as the other ## two, and
adds one more. ## It prints out
24 hours. ## However, I needed a
few ## spaces above. So I
started ## the variable, $x to -
4, and ## added an if-then
statement ## to print out some-
thing only ## if $x > 0. for
($x=-4; $x<24; $x++) {
?>
<tr><td align=right width=5%>
<?php if ($x=0) { print $x;
print ':00'; } ?>
</td>
<?php
if (((int)($x/2)*2) == $x) $bgc
= "#####"; else $bgc =
"#####";
for ($y=0; $y<7; $y++) { ?>
<td width=13% bgcolor= <?php
echo
$bgc ?> ><pre> </pre></td>
<?php
} ?>
</tr>
<?php
}
?> </table></td> </tr></table></body></
html>
```

It took me 15 minutes to write it from scratch, 45 minutes to tweak it. I can tweak it very easily, deciding on colors or layout, or number of cells, without editing the HTML source directly. Had I done this by hand, I probably would have taken all day.

Also, like any programming language, everyone has his or her own style. I am personally tickled by how PHP can parse a file alternating between HTML and PHP. As a native speaker of both English and Manderine Chinese, its fun to be able to just switch back and forth between the two languages (or in

HTML's case, markup) to something or someone who understands it.

I have also developed a PHP library that allows me to quickly write web pages. I can now concentrate on the web page's content, rather than its layout. And when I want to deal with the layout, I only need to make changes to the library scripts, rather than the output HTML. My web page here at the Crew's site, <http://post369.columbus.oh.us/post.d/members.d/Youth.d/hoshsi.d/> was created with this library. I'll talk more about this project in next month's publication.

The Eagle Scout The Scouter

Any male Venturer who has achieved the First Class rank as a Boy Scout in a Troop or Varsity Scout in a team may continue advancement toward the Star, Life, and Eagle Scouts ranks up to his 18th birthday. He must meet the requirements as prescribed in the official Boy Scout Handbook and the current Boy Scout Requirements book. The Venturer may fulfill leadership requirements by serving as president, vice president, secretary, or treasurer of his crew, or a boatswain, boatswain's mate, yeoman, purser, or storekeeper for his ship.

The Scoutmaster conference will be conducted by the Advisor or Skipper. As the Venturer meets requirements for the Star and Life ranks, a board of review will be conducted by the crew or ship committee. The Eagle board of review should follow the procedures established by the local council.



238% Growth over last year!

Domain	Description	Vistis	%of total
com	US Commercial	4529	40.0
net	Network	2641	23.3
numeric	IP Address	1700	15.0
edu	US Educational	887	7.8
uk	United Kingdom	314	2.8
ca	Canada	267	2.4
us	United States	90	0.8
au	Australia	83	0.7
mil	US Military	74	0.7
org	Non-Profit Organization	69	0.6
gov	US Government	67	0.6
sg	Singapore	58	0.5
de	Germany	55	0.5
nl	Netherlands	49	0.4
se	Sweden	42	0.4
jp	Japan	40	0.4
fi	Finland	26	0.2
fr	France	22	0.2
ie	Ireland	19	0.2
no	Norway	17	0.2
dk	Denmark	17	0.2
mx	Mexico	16	0.1
be	Belgium	16	0.1
br	Brazil	16	0.1
nz	New Zealand (Aotearoa)	15	0.1
ch	Switzerland	15	0.1
tr	Turkey	14	0.1
ru	Russian Federation	14	0.1
pt	Portugal	13	0.1
my	Malaysia	13	0.1
za	South Africa	13	0.1
es	Spain	9	0.1
is	Iceland	7	0.1
it	Italy	7	0.1
hr	Croatia (Hrvatska)	7	0.1
at	Austria	7	0.1
gr	Greece	6	0.1
il	Israel	6	0.1
in	India	5	0.0
ro	Romania	5	0.0
cz	Czech Republic	5	0.0
hk	Hong Kong	5	0.0
pl	Poland	5	0.0
ar	Argentina	5	0.0
hu	Hungary	4	0.0
tw	Taiwan	3	0.0
kr	Korea (South)	3	0.0
th	Thailand	3	0.0
ae	United Arab Emirates	2	0.0

Domain	Description	Vistis	%of total
yu	Yugoslavia	2	0.0
uy	Uruguay	2	0.0
cl	Chile	2	0.0
co	Colombia	2	0.0
si	Slovenia	2	0.0
pe	Peru	2	0.0
ph	Philippines	1	0.0
lu	Luxembourg	1	0.0
tt	Trinidad and Tobago	1	0.0
ee	Estonia	1	0.0
ua	Ukraine	1	0.0
mt	Malta	1	0.0
mv	Maldives	1	0.0
arpa	Old style Arpanet	1	0.0
na	Namibia	1	0.0
bn	Brunei Darussalam	1	0.0
bs	Bahamas	1	0.0
cn	China	1	0.0
sk	Slovak Republic	1	0.0
su	USSR (former)	1	0.0

Host Address	Hits	% of total
www.proxy.aol.com	5959	5.23
jschlege.campus.vt.edu	1370	1.20
brillo.av.pa-x.dec.com	1031	0.91
taz.northernlight.com	759	0.67
rtldial1.mps.ohio-state.edu	679	0.60
d502.velocity.net	670	0.59
pm31-p172.netexp.net	574	0.50
me-dhcp-160.eng.ohio-state.edu	556	0.49
scooter.pa-x.dec.com	499	0.44
rhea.eecs.lehigh.edu	489	0.43
gmas1-p23.telepac.pt	479	0.42
p1.bankone.com	468	0.41

Browser Class	% of total
Netscape Navigator	49.0
Microsoft Internet Explorer	44.7
Other	6.3

Platforms	% of total
Windows 95	53.7
Other	20.9
Windows NT	9.4
UNIX	9.0
Macintosh	4.4
Windows 3.1 or lower	2.5
OS/2	0.1

Avg Hits/Hour	43
Max Hits/Hour	73
Min Hits/Hour	9
Avg Hits/Day	981

<http://post369.columbus.oh.us>

James D. Corder

From September 8, 1998 to January 1st 1999 there were 29931 accesses and 113830 hits. Each visitor viewed an average of 2.6 pages and downloaded 74.1 kilobytes. Hosts visited Venture Crew 369's Home Page an average of 1.7 times, for a total of 11331 unique visits by 6721 unique hosts. Venture Crew 369's Home Page served 819.5 megabytes of information during this time period. There were 4.1 visits per hour, and a sustained rate of 41.4 hits per hour.

2
3
8
%

Web
Access
Growth!

Fuzzy Logic, and its Applications

Jason Cunyningham
PacoElTaco@aol.com

I can imagine writing AI script can be a very difficult task, and to simplify this task you can use Fuzzy Logic. For example one of my current favorite games gran turismo, a car racing game where you race a computer, I think would be very difficult to program because you would have to write script for every single possibility and also it would have to be extremely precise. If you decided that when your car gets close you want their car to go away you have to set hard values for to items "close" and "go away" which at times can be difficult. Some people answer to this would be to simply pick arbitrary numbers that seem close to what they should be, but other people ridding the paradigm shift would use fuzzy variables and fuzzy sets so that there are very few hard set rules for game play. Regular logic would say "car A go to 4 meters away to the left when you are <4 meters form Car B" but fuzzy logic would say "if car A is around 4 meters from Car B then go farther away." They can do this part by using fuzzy sets that set certain words such as far, near, close and around approximate numeric values.

Of course not all fuzzy logic works the same way much the same way as not all types of C work the same. Fuzzy logic can cut processing time way down and can shorten programs by fast amounts by simply NOT paying to much attention to details. This is the part where most people take sides between the two logic's. In my opinion fuzzy logic and standard logic both have there applications. Standard logic will continue to be used in calculators and most basic programming whereas fuzzy logic has already been incorporated in such things as land rovers on mars where time and size matter but not being totally precise. But the best

Hello Mr. Corder!

Congratulations!!... Your site definitely qualifies for the "Critical Mass Award". A very nice site, excellent design, clever original graphics, great photos, and your content is informative, entertaining, presented well and easy to access. A ***worthy*** enterprise and a positive contribution to the Web.

Thanks for helping make the Web a more interesting, fun and attractive place to visit. I really enjoyed my visit to your site and will return again when time permits :)

Cheers,... Bill Darling



part is that you can use the two of them interchangeably and in combinations to make really remarkable programs that would be much more difficult to do if the two didn't work together.

You may know that in Japan, Fuzzy logic is the most popular item on the markets and that even there government is using it in such things as the Sendai subway and basic research centers. I believe and hope that in a few years Fuzzy Logic will no longer be feared and equally not thought of as the answer to all problems but will be excepted for what it is, a useful tool in the world AI and other related devices.

Venturing Program Information

The Scouter

Recent changes in Exploring program, made by the National Office of the Boy Scouts of America, has renamed the Explorer Posts that conduct highadventure activities or are related to a church group as Venturing Crews, effective August 1, 1998. The program of Exploring is now for career exploration and associated with a business or school. In general, Venture Crews now specialize in of the following areas: outdoor, sports, arts/hobbies, youth ministry, or Sea Scouting.

Venturing is still a youth development program of the Boy Scouts of America for young men and women who are 14 through 20 years of age. It's purpose is to provide positive experiences to help young people mature and to prepare them to become responsible and caring adults.

Venture Crews can specialize in a variety of avocation or hobby interests. Venturing programs are developed around the following six experience areas of emphasis: citizenship, leadership, fitness, social, outdoor, and service.

A variety of awards are available to Venturers, including the Venturing Silver Award, the highest award within the Venturing program. The Ranger Award is a specialized outdoor award.

The National Office is still in the process of designing and printing a number of information pieces regarding the Venture program. Currently, the Venturing Leader Manual is available from the Scout Shop or your field office, as is the Ranger Guidebook. More information will be forthcoming!



Council Venturing Committee

The Scouter

A few representatives from Venture Crews within the Council met on Thursday, November 19 to investigate the possibility of forming a Council Venturing Committee. Comprised of volunteers interested in the Venturing program within the Simon Kenton Council, this committee would be charged with providing leadership to program planning and support for Venturing Crews within the Council. The Council will provide a professional staff advisor to support the committee.

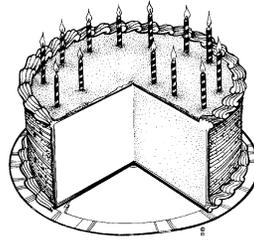
Specific duties of the committee include:

- Have a leadership structure of committee officers and committee members.
- Report to the Senior Vice President of Field Operations in the Council committee structure.
- Provide communications to Venture Crews on program support and Council Venturing activities.
- Provide "mega-activity" opportunities for Venture Crews and their members.
- Provide a regular Roundtable training opportunity for Venture Crew leadership including youth officers.
- Provide basic leader training opportunities for Venture Crew Leaders.

Happy Birthday 369

James D. Corder

Venturing Crew 369 is starting their 5th year. Troop 369 is starting their 37th year.



6 Steps to Marketing

Jim Scherer Skyshark44@aol.com

1. First, you need to find or create a product that either has a demand or that a demand can be created for.
2. Next, decide which group of people will be most apt to buy your product.
 - Using this information you can figure out where you will sell your product.
3. Then determine which is the most efficient way to make it.
 - You need to determine that it will not cost too much and whether it is more

efficient to buy the product materials partially made and put them together or even buy the product completely made and just sell it.

4. After that, figure out how you will be advertising it.
 - It should be affordable advertising. A starting business should not blow all their money on a TV commercial. You should start small and make sure the product sells first.
5. Then, set a price that people will pay and will also give you profits.
 - A good suggested retail price is necessary for people to be willing to buy the product.
 - Stores will not sell a product if they have to buy it for a lot. So ask stores what they will be willing to buy the product for and make sure it is enough to cover your expenses and make you a profit.
6. Finally, you will want to produce your product, distribute it to retailers and sell it.

Using the Concurrent Versions System (CVS)

Jon Schlegel jschlege@vt.ed

Introduction

Have you ever wondered how large programming teams keep track of and manage their collection of sources? This is not such an easy thing to do when you are dealing with hundreds of megabytes of sources and hundreds more to store revision information on sources. Another difficulty is merging different branches of the same source. If this was done by humans it would take a team alongside the programming team just to manage the development. This may work well for some situations, but what if the programming team is spread across the globe, there is not organizational team, or if the people who are working on the project are not always the same? There

Hi JD,

I was very impressed by all the hard work you have put into the site and have to congratulate you on a wonderful achievement in web site design.

I would like to extend my congratulations on producing a very informative and resource site. An excellent addition to the web, one that you should be very proud of. It really is impressive work.

Sincerely, Ben



are a number of programs out there known as Revision Control Systems, or RCS, that handle all of the bookkeeping of sources that a programming team would need.

CVS Installation

A popular revision control system is known as Concurrent Versions System, or CVS, developed by Cyclic Software. CVS is used for a number of well known development projects. Among them is Netscape's Mozilla project, and the FreeBSD project. If you are going to use CVS to manage your own project or to help work with others, you'll need to download a copy of the client from Cyclic Software's web site at <http://www.cyclic.com/> and then build the executable. CVS's build and install procedures are gnu compliant so the following commands should be successful:

```
# ./configure
# make
# su
# make install
```

Setting up your CVS Server

On the server machine, you'll want to set the following environmental variable. `CVSROOT = /the-dir/you-want/it-in` This will tell CVS where to find it's home. After that, run the initialization command.

```
# cvs init
```

The command will create a sub-directory in `$CVSROOT` named `CVSROOT`. This is where all the history, log, and other administrative files reside. Now that your CVS system is set up, you'll need to get it ready for group work.

```
1. Add a group to /etc/group called cvs.
2. Set the permissions correctly:
# chgrp cvs $CVSROOT
# chgrp cvs $CVSROOT/CVSROOT
# chgrp cvs $CVSROOT/CVSROOT/*
# chgrp cvs $CVSROOT/CVSROOT/.*
# chmod 775 $CVSROOT
# chmod 775 $CVSROOT/CVSROOT
```

At this point you are finished with the basic server configuration. From

this point on you should never directly work with `$CVSROOT` and its subdirectories. All file manipulation should be done with CVS commands; this is to ensure the integrity of the database.

Using CVS as a client

Once there is a server set up and ready for submissions you can add projects with the `cvs import` command. If you are in `$HOME`, your project is in `$HOME/myproj`, and you want your project to appear as `$CVSROOT/proj1` in the repository execute:

```
# cd myproj
# cvs import -m "My project description"
proj1 proj1 start
```

If you don't supply a project description `cvs` will start an editor and prompt you to fill it in. The second "proj1" and the "start" have no purpose in this context but are necessary for the import command so they must be present. Once you have at least one project under CVS's control you can start using it to its full abilities. A simple programming session may look similar to this:

```
# cd temp
# cvs checkout project1
```

This will get the most current versions of `project1`. To obtain an earlier version specify the `-r` tag.

```
# cd project1
# edit the sources, add new files, etc.
# cd ..
# cvs commit project1
```

After you are finished making changes to `project1`, commit it back to the repository so others can add to your work. You can specify a description of your changes with a `-m` option, if you decide not to `CVS` will start an editor and prompt you for it anyway.

Using CVS remotely

Not everyone will be local to the server machine, if they were, using CVS would not be as necessary or useful. So there are a few changes to be made in the remote client to connect to the server. CVS connects to the server machine through another remote authentication program, such as `rsh`, or `ssh`. Any proto-

col that does not alter the data will work fine. Microsoft Windows' implementation of `rsh` will not work because of the way it alters carriage returns. Regardless of what form of authentication you use, set it up to allow connections from the correct `user@hosts`. There are two environmental variables you need to change or set.

```
CVSROOT = :ext:user@host:/remote/dir/
to/cvs
CVS_RSH = ssh
$CVSROOT breaks down like this:
```

"ext" specifies that you are using an external protocol "user@host" is the username and host name of the system you are connecting to. The rest is the directory to `$CVSROOT` on the remote machine.

`$CVS_RSH` does not need to be set if you are using `rsh` (default) but if you want to use something like `ssh` simply make sure your `ssh` program is in your path.

At this point, all work with CVS works exactly as it does if you were local to the machine.

Final Note

CVS is a very extensive revision control system. There are many commands available that I did not discuss. This is enough to get started and to allow enough understanding to make the actual CVS documentation an easy reference manual. CVS works wonderfully for 3-7 person projects as I am using it for at the time of this writing, all the way up to world-wide efforts such as FreeBSD, Mozilla, and others. It's not limited to programming, it can be used for drafts on english papers, technical writings, or virtually anything that is modified over time.

