

Troubleshooting Apache configurations

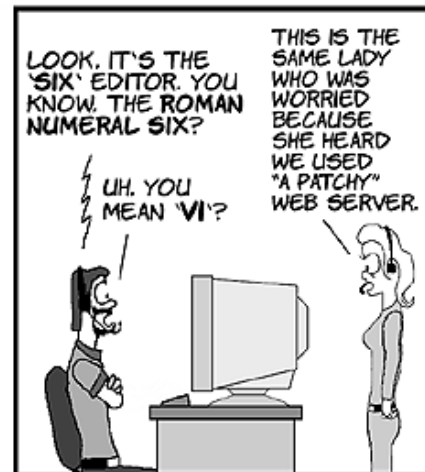
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USER FRIENDLY by Illiad



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I'M SORRY M'AM, BUT I DON'T KNOW WHAT EDITOR THIS IS THAT YOU'RE TALKING ABOUT.



*There are but very few personal problems that can't
be solved by application of an appropriate
amount of dynamite!*

Does this apply to Apache?

...

Agenda

1. Introduction

2. Tools

3. Logs

4. Troubleshooting

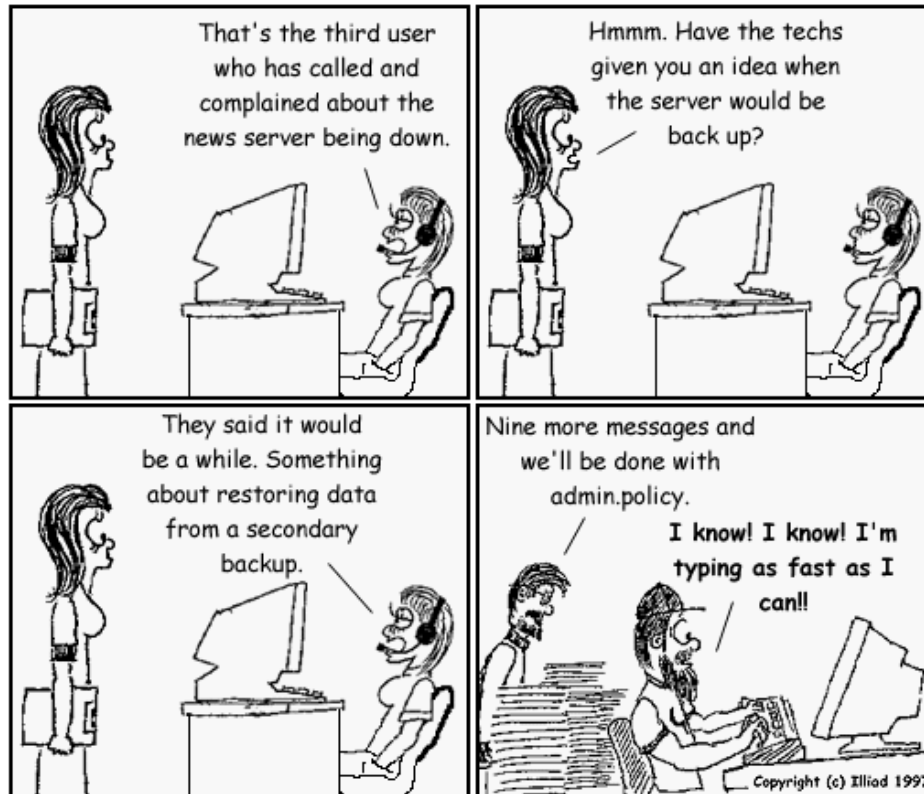
backups: always in season, never out of style.

Real men don't take backups!

Real men cry from time to time instead!

backups: always in season, never out of style.

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Backup your config file

- version control
 - cvs/rcs/subversion ...
- Simple
 - .old .older .reallyold .oldest
 - `cp httpd.conf httpd.conf.`date '+%F_%H%M'``
 - inline copy

Browsers lie

- Internet explorer
 - own error messages
 - dns error
- Mozilla & friends
 - aggressive caching
- The serverside
 - generic errors
 - security

Tools

1. Httpd
2. Telnet
3. openssl s_client
4. Netstat
5. Other tools

Tools - httpd

Not really a tool, but...

httpd

- V : show compile settings
- t : run syntax check for config files
- l : list compiled in modules
- L : list available configuration directives
- S : a synonym for -t -D DUMP_VHOSTS

Tools - httpd -V

Server version: Apache/2.0.52

Server built: Oct 8 2004 13:52:11

Server's Module Magic Number: 20020903:9

Architecture: 32-bit

Server compiled with....

```
-D APACHE_MPM_DIR="server/mpm/worker"
```

```
... [SNIP] ...
```

```
-D HTTPD_ROOT="/opt/run/httpd-2.0.52/"
```

```
-D SUEXEC_BIN="/opt/run/httpd-2.0.52//bin/suexec"
```

```
-D DEFAULT_ERRORLOG="logs/error_log"
```

```
-D SERVER_CONFIG_FILE="conf/httpd.conf"
```

Tools - telnet

```
$ telnet www.apache.org 80
```

```
Trying 209.237.227.195...
```

```
Connected to www.apache.org.
```

```
Escape character is '^]'.
```

```
HEAD / HTTP/1.0
```

cont...

Tools - telnet

HTTP/1.1 200 OK

Date: Tue, 12 Oct 2004 09:36:24 GMT

Server: Apache/2.0.52 (Unix)

Last-Modified: Tue, 05 Oct 2004 02:22:19 GMT

ETag: "2da780f-2e53-ee37ccc0"

Accept-Ranges: bytes

Content-Length: 11859

Cache-Control: max-age=86400

Expires: Wed, 13 Oct 2004 09:36:24 GMT

Connection: close

Content-Type: text/html; charset=ISO-8859-1

Connection closed by foreign host.

Tools - telnet

```
$ telnet www.apache.org 80
```

```
Trying 209.237.227.195...
```

```
Connected to www.apache.org.
```

```
Escape character is '^]'.
```

```
GET /foundation HTTP/1.0
```

```
Host: www.apache.org
```

```
HTTP/1.1 301 Moved Permanently
```

```
Location: http://www.apache.org/foundation/
```

Tools - openssl s_client

```
$ openssl s_client -connect 127.0.0.1:443
```

```
-connect host:port
```

```
-showcerts
```

```
-state
```

```
-debug
```

```
-cert certname -key keyfile -CAfile file
```

```
-ssl2, -ssl3, -tls1, -no_ssl2, -no_ssl3, -no_tls1
```

```
-cipher cipherlist
```

```
-reconnect
```

Tools - openssl s_client

openssl s_client -connect HOST:PORT -debug

CONNECTED(00000003)

write to 08158160 [081581A8] (130 bytes => 130 (0x82))

```
0000 - 80 80 01 03 01 00 57 00-00 00 20 00 00 16 00 00 .....W... .....
```

```
0010 - 13 00 00 0a 07 00 c0 00-00 66 00 00 07 00 00 05 .....f.....
```

```
0020 - 00 00 04 05 00 80 03 00-80 01 00 80 08 00 80 00 .....
```

```
0030 - 00 65 00 00 64 00 00 63-00 00 62 00 00 61 00 00 .e..d..c..b..a..
```

```
0040 - 60 00 00 15 00 00 12 00-00 09 06 00 40 00 00 14 `.....@...
```

```
0050 - 00 00 11 00 00 08 00 00-06 00 00 03 04 00 80 02 .....
```

```
0060 - 00 80 1c 42 8e db df 85-34 b5 f6 4c 1e e7 cb 57 ...B....4..L...W
```

```
0070 - b2 ef 99 21 91 92 1e 08-3f 75 84 16 ce f7 88 63 ...!....?u.....c
```

```
0080 - f4 5a .Z
```

read from 08158160 [0815D708] (7 bytes => 7 (0x7))

```
0000 - 3c 21 44 4f 43 54 59 <!DOCTYPE
```

17300:error:140770FC:SSL routines:SSL23_GET_SERVER_HELLO:unknown protocol:s23_clnt.c:470:

Tools - openssl s_client

```
openssl s_client -connect www.apache.org:80  
-debug
```

```
CONNECTED(00000003)
```

```
write to 08158160 [081581A8] (130 bytes => 130 (0x82))
```

```
...[SNIP]...
```

```
read from 08158160 [0815D708] (7 bytes => 7 (0x7))
```

```
0000 - 3c 21 44 4f 43 54 59 <!DOCTYPE
```

```
17300:error:140770FC:SSL
```

```
routines:SSL23_GET_SERVER_HELLO:unknown
```

```
protocol:s23_clnt.c:470:
```

Tools - netstat

```
$ netstat -an
```

Active Internet connections (servers and established)

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	State
tcp	0	0	0.0.0.0:80	0.0.0.0:*	LISTEN
tcp	0	0	0.0.0.0:21	0.0.0.0:*	LISTEN
tcp	0	0	0.0.0.0:443	0.0.0.0:*	LISTEN

```
$ netstat -an| grep LISTEN
```

```
$ netstat -anp -inet
```

Other options: fuser, lsof, pfiles

Tools - other

- See <http://httpd.apache.org/dev/debugging.html>
 - gdb
 - strace/trace/truss/dtrace
 - tcpdump
- See <http://www.research.att.com/~hpk/wsp/>
 - Web Scraping Proxy
- Webdeveloper for mozilla / firefox
 - see moz site (many other alternatives)

Logs - Always check the error log

ErrorLog - (logs/error_log)

LogLevel - (debug, info, notice, warn, error...

RewriteLog

RewriteLogLevel (0 - 9)

ScriptLog

ScriptLogBuffer (1024)

ScriptLogLength

--with-suexec-log= - (logs/suexec_log)

AP_LOG_EXEC (suexec -V)

SSLLog - 1.3 mod_ssl only

SSLLogLevel - 1.3 mod_ssl only

Troubleshooting

1. Connection errors
2. Startup errors
3. 404s
4. 403s
5. Redirection errors
6. Scripting errors

Connection errors

- is the server running at all
 - ps
 - netstat -an
 - telnet 127.0.0.1 80
- did the request reach the server
 - tail -f logs/access
 - tcpdump
- protocol errors (SSL)
 - openssl s_client

Startup errors

- Always look in the error log
 - strace/truss/trace
- "Socket Already in use"
 - Check for duplicate Listen directives
- Common causes
 - ServerName
 - logfiles in directories that doesn't exist
 - Segfault

404s

- 404 not found
 - error log
 - access log
- Common causes
 - (Script)Alias - (also mismatched /)
 - Redirects
 - ServerName
 - Relative / Absolute path
 - RewriteRules

403s

- 403 Forbidden
 - error log
- "client denied by server configuration"
 - httpd.conf - deny from
- "user dfsfdd not found"
 - check password file
- "does not meet 'require'ments for user/valid-user"
 - Check Require statement
 - valid-user / group / user

Redirection errors

- See also 404s

Scripting errors

- 500 Internal server error
 - error log
 - execute script locally - ./script
 - suexec log
 - ScriptLog
- No output / unparsed output
 - ScriptAlias
 - Options +ExecCGI

htaccess errors

- 500 Internal server error
 - error log
 - "syntax error" -> 500
 - Not allowed in this context
 - AllowOverride
- "No effect"
 - AllowOverride
 - echo "garbage" >> .htaccess

Questions?



<http://people.apache.org/~mads/ac2006/troubleshooting.pdf>