

WebDAV

Rich Bowen
rbowen@apache.org

ApacheCon US 2006
Austin





Introduction

- <http://www.ietf.org/rfc/rfc2518.txt>
- DAV = Distributed Authoring and Versioning
- Authoring = pretty much whatever you want it to mean
- Versioning = ... well, we'll get to that



Distributed

- Distributed means that connections can be from anywhere
- Like the web itself
- Uses HTTP as the transfer protocol



Authoring

- Create and edit documents
- Uses standard HTTP methods for some things, and has additional methods for others.



Versioning

- Delta-V
- Not actually implemented in most DAV implementations



Read/Write web

- The initial vision for the web included the ability to write as well as read
- Wikis are one interesting part of this
- WebDAV is another way that it's possible



Apache 1.3

- For Apache 1.3, mod_dav is a third-party module
- Obtain it from http://webdav.org/mod_dav/
- Install via apxs

```
./configure --with-apsxs=/usr/local/apache/bin/apsxs  
make  
make install
```



Configuration

- Tell Apache about it:

```
Loadmodule dav_module libexec/libdav.so  
Addmodule mod_dav.c
```

- apxs -cia should have done this for you



Apache 2.0

- For Apache 2.0, mod_dav is part of the standard distribution
- Not enabled by default in a source build

```
--enable-dav --enable-dav-fs
```

- # Or, install with apxs

```
apxs -cia mod_dav.c  
apxs -cia mod_dav_fs.c
```



Installation

- Tell Apache about it:

```
LoadModule dav_module modules/mod_dav.so
```

- apxs -cia should have done this for you



Configuration

```
DavLockDB /var/dav/davlock  
<Directory /www/htdocs/upload>  
    Dav On  
</Directory>
```



DayLockDB

- Path is relative to ServerRoot
- Directory needs to be writeable by the User user or the Group group



...

```
User www  
Group www  
DavLockDB /var/dav/davloc
```

```
mkdir /var/dav  
chown www:www /var/dav  
chmod 700 /var/dav
```



Dav On

- Turns on DAV for that directory

```
Alias /uploads /usr/local/apache/uploads
```

```
<Directory /usr/local/apache/uploads>
```

```
    Dav On
```

```
    Order allow,deny
```

```
    Allow from all
```

```
</Directory>
```

- Directory can now be accessed with any DAV client



Permissions

- /usr/local/apache/uploads needs to be writeable by User:Group also
- This is a violation of basic Apache security principles
- More on this in a moment



Restricting Dav

```
<Location /uploads>  
  DAV On  
  # Limit just the DAV methods  
  <Limit PUT POST DELETE PROPFIND  
PROPPATCH MKCOL COPY MOVE LOCK UNLOCK>  
    AuthType Basic  
    AuthName uploads  
    AuthUserFile /etc/apache/passwords  
    Require user rich  
  </Limit>  
</Location>
```



Possible problems

- .php files are parsed prior to being sent to the DAV client. (Or ssi, or cgi, or whatever)
- Files must be writeable by the User user.
- Different access control needed for DAV accesses than for regular web access.



One possible solution

- I run a secondary HTTP server on another port, with a greatly reduced number of modules, solely for DAV.
- Run it as a different user (say, dav, for example)
- Content is owned by that user
- Doesn't have php, cgi, etc loaded



Configuration

- Server 1

```
DocumentRoot /var/www/htdocs  
User nobody  
Group nobody  
# Dav not installed. View-only
```

- Server2

```
DocumentRoot /var/www/htdocs  
User dav  
Group dav  
# Dav enabled. php, cgi, etc, not installed
```



Permissions

- Server 2 runs on an alternate port
- Possibly runs SSL
- `/var/www/htdocs` is owned by `dav:dav`



Uploading .php files

```
RewriteEngine On
```

```
RewriteCond %{HTTP_METHOD} ^PUT
```

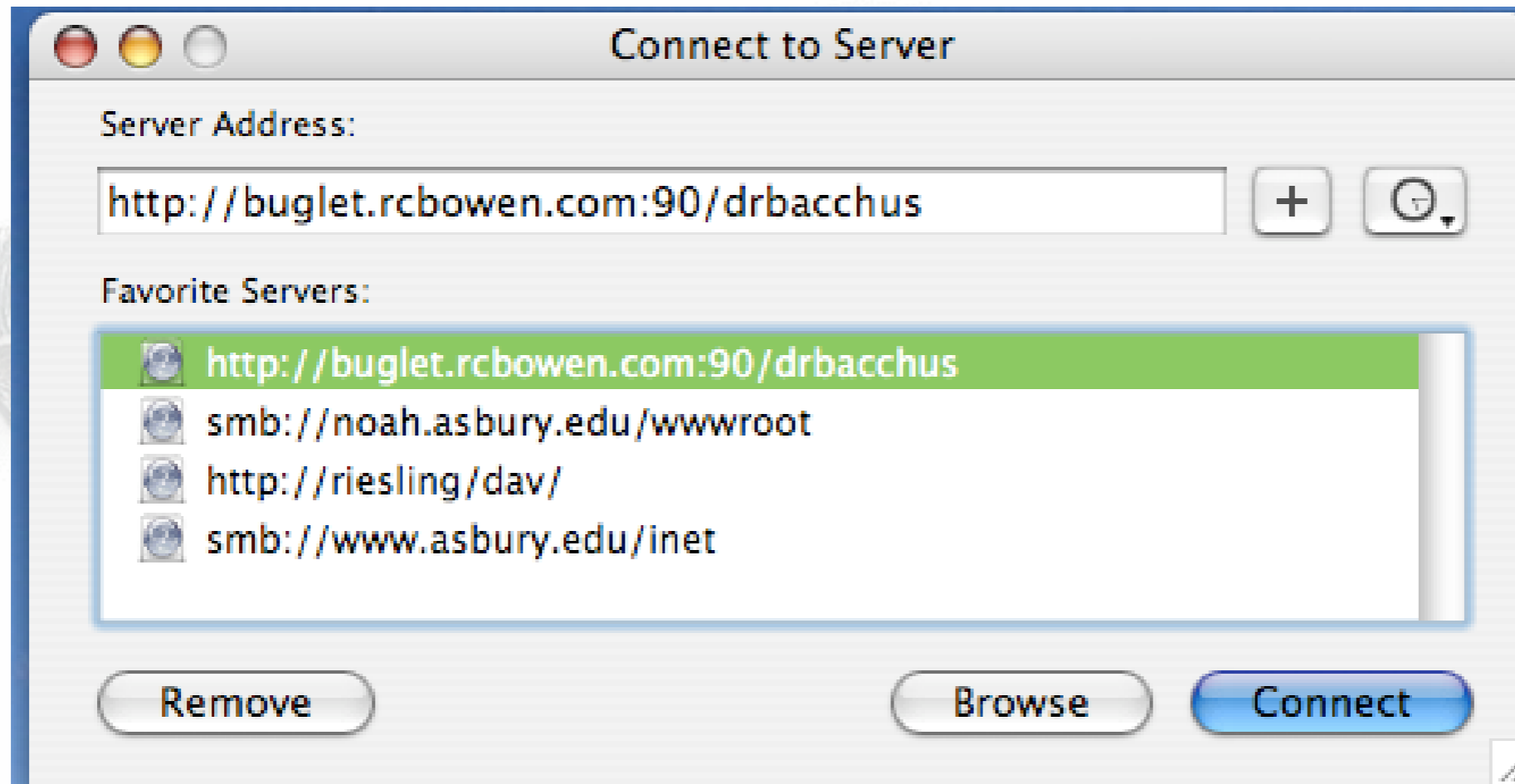
```
RewriteRule ^(.*)\.php $1.nophp [PT]
```

```
RewriteCond %{HTTP:DESTINATION} \.php
```

```
RewriteRule . - [F]
```

Day clients

- MacOSX - Everything is DAV aware






Windows

- With IE 5.0 added a sort of DAV
- "Web Folders" or "Network Places".
- You can map a drive letter to a DAV share
- You can't open files in place, but you can copy them to and from the DAV share
- Tends to generate a lot of warning messages in the Apache error log, looking for `_vti_` something directories. These can be safely ignored, although you may want to turn down the LogLevel

Or ...

NetDrive Version 4.1

File Help

 Lan2

Site Name:

Site Address/URL:

Server Type: Drive:

Connect at login/startup
 Add to tray connect menu

Anonymous/Public Logon

Username:

Password:
 Save Password

Pass Phrase:



Linux

- davfs - <http://dav.sourceforge.net/>
- KDE Desktop
- Nautilus
- Lots of other things



DAV client apps

- cadaver
- Dreamweaver
- KDE Desktop
- DAV Explorer (<http://www.ics.uci.edu/~webdav/>)
- Others, listed at
- <http://www.webdav.org/projects/>



cadaver

- INSERT CADAVER DEMO HERE



SSL

- Configuration: Set up as an ordinary SSL vhost
- Client: Some client applications support it, others do not



Browser incompatibilities

- Some browsers don't correctly handle trailing slash redirects:

```
BrowserMatch "MS FrontPage" redirect-carefully
```

```
BrowserMatch "^WebDrive" redirect-carefully
```

```
BrowserMatch "^WebDAVFS/1.[0123]" redirect-carefully
```

```
# ... etc
```



iCalendar

- RFC 2445 describes a calendaring protocol called 'iCalendar'
- Includes an ASCII format for expressing event information
- Various applications understand, and produce, the iCal format. eg the iCal, Sunbird
- So, what does this have to do with WebDAV?



iCalendar

- The iCal application has the built-in ability to save a calendar to a Dav repository, and "subscribe to" a calendar available over HTTP.
- When you make a change to your calendar in iCal, it is automatically posted up to your Dav server.
- Demonstration of iCal goes here.



Outlook

- If you use Outlook, there are a few ways to do the same thing with your Outlook/Exchange calendar
- <http://www2.et.byu.edu/~njones/share/outlook2ical/>
- This allows you to publish a calendar, and have other people subscribe to that calendar, giving shared calendaring with minimal effort.



phpicalendar

- <http://www.asbury.edu/calendar/>
- Allows multiple content providers to publish their iCalendar content and have it all displayed in one place.



Subversion

- Replacement for CVS
- Uses DAV as the transfer protocol
- Many/Most Open Source projects use this as their development environment



Svn

- Because SVN is DAV/HTTP based, you can see it in your browser, which makes it immediately more accessible than CVS
- <https://svn.apache.org/repos/asf/httpd/httpd/trunk/>
- Also, more friendly interface available
- <http://svn.apache.org/viewvc/httpd/httpd/trunk/>

svn

```
<Location /svn>
```

```
  Dav svn
```

```
  SvnPath /home/svn/rcb_svn
```

```
  <LimitExcept GET PROPFIND OPTIONS REPORT>
```

```
    AuthType Basic
```

```
    AuthName docs
```

```
    AuthUserFile /usr/local/apache/conf/svn.pass
```

```
    Require valid-user
```

```
  </LimitExcept>
```

```
</Location>
```



Autoversioning

```
<Location /dav>
```

```
  DAV svn
```

```
  SvnPath /path/to/svn/repos
```

```
  SVNAutoversioning On
```

```
</Location>
```



Network file systems

- If you're in a multi-OS environment, Dav is a great replacement for things like NFS and SMB
- If you're maintaining a website, it's a great replacement for FTP, and can be run over HTTPS for security
- Can authenticate the share against anything, using available authentication modules.
- But it gets around some of the file permission problems that are common to other network file systems in multi-os environments.



Questions?

- #apache on irc.freenode.net
- rbowen@apache.org
- <http://people.apache.org/~rbowen>

