

## Tutorial: Troubleshoot a Web server with Unix

Our Web server's gone down and we need to get it back! Fortunately, with just a few Unix commands we can find out what's wrong and then fix it – fast

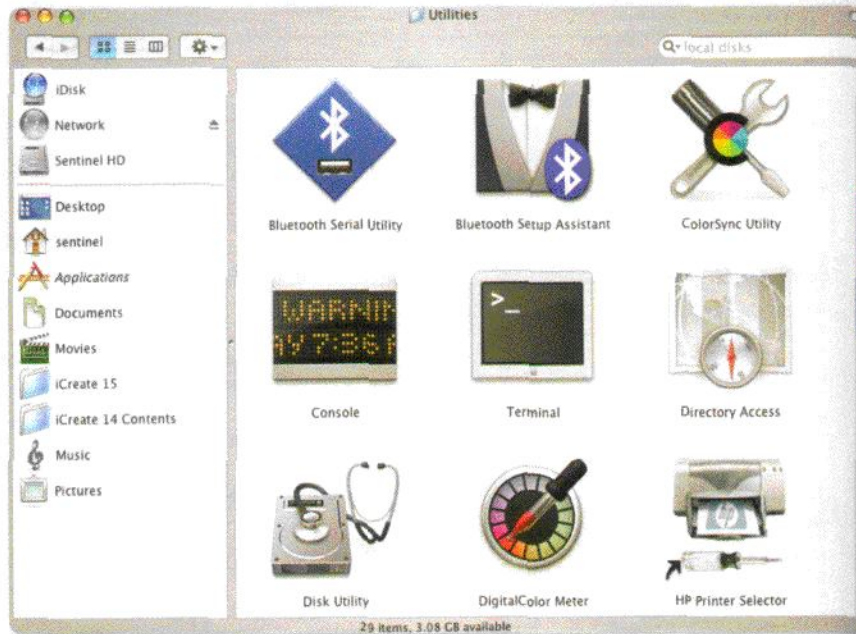


**Task:** Diagnose and fix a Web server problem using Unix

**Difficulty:** Expert

**Time needed:** 20 minutes

Jimmy, the tech support at iCreate Consultants, knows PCs backwards but hasn't a clue when it comes to Macs. His visit to the server room has caused one of the OS X Web servers to stop working. What has he done and how can we repair it? We don't have the time to get the key to the server room back off Jimmy. Fortunately, our knowledge of Unix allows us to log in to the server remotely, find out what the problem is, and fix it – all in less time than it would take to get the key and use OS X's plethora of eye candy.



### Step-by-step OS X Web server trickery with Unix

#### 1: Find the server

```

Terminal -- bash -- 80x24
Last login: Wed Jan 5 16:22:24 on ttty1
Welcome to Darwin!
server:~ icreate$ nslookup www1.icreate.com
Note: nslookup is deprecated and may be removed from future releases.
Consider using the 'dig' or 'host' programs instead. Run nslookup with
the '-sil[ent]' option to prevent this message from appearing.
Server:
  10.0.1.2
Address:  10.0.1.2#53

Name:   www1.icreate.com
Address: 10.0.1.21

server:~ icreate$ ping 10.0.1.21
PING 10.0.1.21 (10.0.1.21): 56 data bytes
64 bytes from 10.0.1.21: icmp_seq=1 ttl=64 time=2.174 ms
64 bytes from 10.0.1.21: icmp_seq=2 ttl=64 time=16.203 ms
^C
--- 10.0.1.21 ping statistics ---
3 packets transmitted, 2 packets received, 33% packet loss
round-trip min/avg/max = 2.174/9.188/16.203 ms
server:~ icreate$ ssh icreate@www1.icreate.com
    
```

'PING' lets us check that the server is responding to network requests (although secure servers won't respond).

'nslookup' makes sure that finding server 'www1' isn't the problem and tells us what its network address is.

Now we know it's working, we can log into the server using 'ssh'.

Press 'Ctrl' and 'C' to stop any Unix command, including 'ping', if it looks like it won't stop.

#### 2: World Wide Where?

```

Terminal -- bash -- 80x24
Any or all use of this system and all files on this system may be
intercepted and monitored.

Unauthorised or improper use of this system may result in disciplinary
and/or legal action. By continuing to use this system you indicate your
awareness of and consent to these terms and conditions of use.

LOG OFF IMMEDIATELY if you are not an authorised user of this system or do
not agree to the conditions stated in this warning.
icreate@www1.icreate.com's password:
Last login: Wed Jan 5 16:25:49 2005 from 10.0.1.2
Welcome to Darwin!
www1:~ icreate$ ps -aux | grep 'httpd' | grep -v 'grep'
www1:~ icreate$ sudo SystemStarter start "Web Server"
Welcome to Macintosh.
Initializing network
net: class is not implemented
ip6: error detaching en0
ip6: error detaching en1
ip6: error detaching fu0
Startup complete.
Hangup
www1:~ icreate$ sudo pico /etc/hostconfig
    
```

'sudo' lets us run processes that usually only the system can run, by becoming the system's "super-user".

'ps' lists running Unix processes. We search the list for the Web server - 'httpd' - using 'grep'. There's nowt.

'SystemStarter' starts and stops processes OS X starts during boot, such as file sharing, FTP and the Web server.

That didn't work - so jimmy turned off the Web server using the System Preferences. Editing '/etc/hostconfig' will fix that.

## Getting used to Unix

### Knowledge Base: Processes

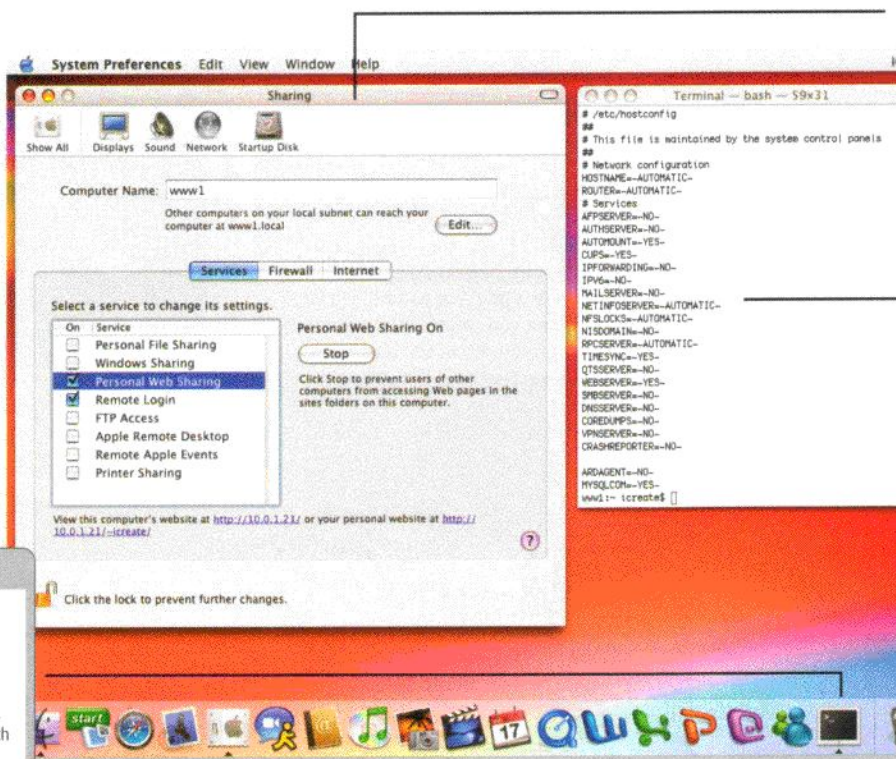
#### Become part of the process

Unix programs are known as 'processes' when they're running. They can be fully-fledged applications, such as Word or iPhoto or they can be the menu bar, the personal file sharing service or something as simple as the clipboard. Not all processes will appear in the Dock (including the Dock itself, of course), but Unix lets you see them all the same.

### Terminal icon

#### Your gateway to Unix

How are we able to noodle around with Unix on Mac OS X? We're using Terminal, a program that resides in 'Applications', 'Utilities' and which allows you to control OS X's Unix core. We've been covering Terminal in-depth since issue 13.



### Cause...

#### Under the hood

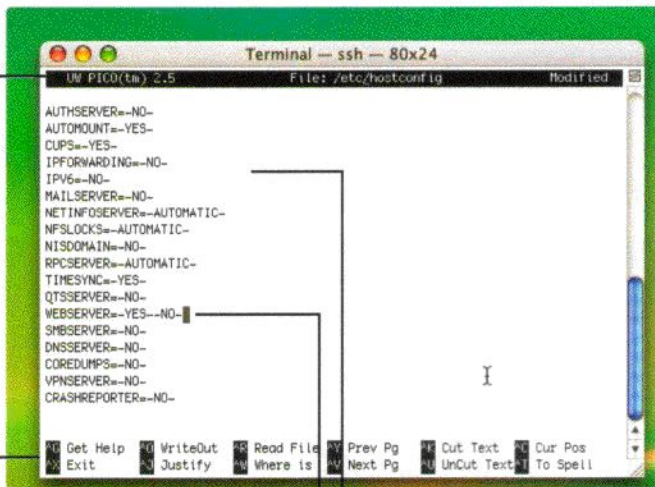
Much of OS X is simply putting a pretty face on existing Unix applications. The Sharing preference pane, for instance, is a user-friendly way of altering several hidden text files.

### ...and effect

#### Applying the fix

We're going to work in reverse and use Unix to alter these text files to override changes made using the System Preferences pane.

## 3: A fit of pico



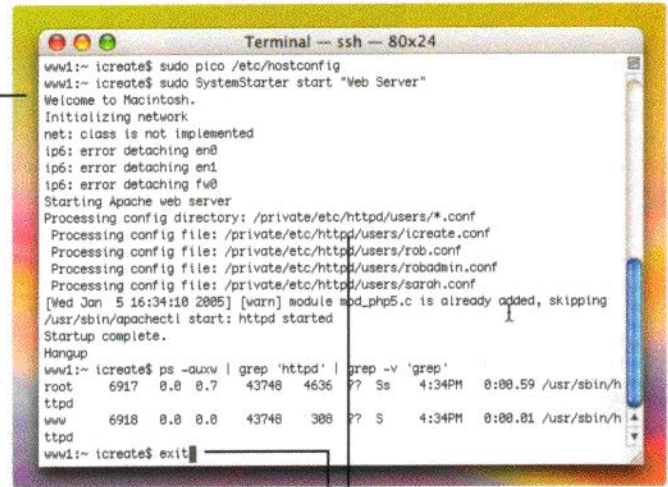
When you're done, press 'Ctrl' and 'O' to save the file. Accept the default save location when prompted.

'/etc/hostconfig' controls the services that System Preferences runs and some hidden ones, too. Switch them on and off here.

Pico is a text editor. The instructions at the bottom tell you how to move around and save the file.

Replacing '-NO-' with '-YES-', can get the Web server to respond to the SystemStarter command.

## 4: Smooth sailing



With '/etc/hostconfig' edited, SystemStarter will now start the Web server. We get a series of messages as it activates.

As a final check, we run the process-checking command again. This time, we get a couple of results. Hooray!

With our work successfully completed, all that's left is to end the connection with 'exit'.