ANSWERS TO EVEN-NUMBERED EXERCISES

2. How would you instruct an Apache server to listen on port 81 instead of port 80?

In **httpd.conf**, change the directive

```
Listen 80
```

to

```
Listen 81
```

4. Apache must be started as **root**. Why? Why does this action not present a security risk?

By default, Apache listens on port 80, which is a privileged port. Only **root** can use privileged ports, so you must start Apache as **root**. Starting Apache as **root** does not pose a security risk because Apache releases **root** privileges as soon as it has started using the port.

6. Why is it more efficient to run scripts using **mod_php** or **mod_perl** than through CGI?

Running a CGI script requires a system call to **fork**() and **exec**() to create a new process. Once the process has finished (which, in the case of CGI scripts, is usually very shortly after it has started), it terminates. A script run from a module does not have this overhead because it runs inside the Apache server process.

8. Some Web sites generate content by retrieving data from a database and inserting it into a template using PHP or CGI each time the site is accessed. Why is this practice often a poor idea?

In many cases, the same data is generated each time a given page is accessed, unnecessarily using CPU and disk resources for each access.

Using resources unnecessarily can result in pages being unavailable when the system load is high.

10. Part of a Web site is a private intranet and is accessed as http://example.com/intranet. Describe how you would prevent people outside the company from accessing this site. Assume the company uses the 192.168.0.0/16 subnet internally.

a. Insert the following lines in **httpd.conf**:

```
<Directory /var/www/html/corp>
        Order deny,allow
        Deny from all
        Allow from 192.168.
</Directory>
```

b. Create the following **.htaccess** file in the **intranet** directory:

```
Order deny,allow
Deny from all
Allow from 192.168.
```