Web Servers (IIS and Apache)

Objectives

- In this lesson, you will learn:
    - To understand a Web server's functionality.
    - To introduce Microsoft Internet Information Services (IIS) and Apache Web server.
    - To learn how to request documents from a Web server.

21.1 Introduction

- Web server
  - Responds to client requests by providing resources
- URI (Uniform Resource Identifier)
- Web server and client communicate with platform-independent Hypertext Transfer Protocol (HTTP)

21.1 Introduction

	IIS 5.0	IIS 6.0	Apache Web server
Company	Microsoft Corporation	Microsoft Corporation	Apache Software Foundation
Version	5.0	6.0	2.0.47
Released	2/17/00	3/28/03	7/10/03
Platforms	Windows 2000, Windows XP	Windows Server 2003	Windows NT/2000/XP, Mac OS X, Linux and other UNIX-based platforms, experimentally supports Windows 95/98
Brief description	The most popular Web server for Windows 2000.	The newest release of IIS from Microsoft.	Currently the most popular Web server.
Price	Included with Windows 2000 and Windows XP.	Included with Windows Server 2003	Freeware.

Fig. 21.1   Web servers discussed in this chapter.

21.2 HTTP Request Types

- Request methods
  - *get*
  - *post*
  - Retrieve and send client form data to Web server
  - Post data to a server-side form handler

21.3 System Architecture

- Multi-tier application (*n*-tier application)
  - Information tier (data or bottom tier)
    - Maintains data for the application
    - Stores data in a relational database management system (RDBMS)
  - Middle tier
    - Implements business logic and presentation logic
    - Control interactions between application clients and application data
  - Client tier (top tier)
    - Application's user interface
    - Users interact directly with the application through the client tier

21.4 Client-Side Scripting versus Server-Side Scripting

- Client-side scripts
  - Validate user input
    - Reduce requests needed to be passed to server
    - Access browser
    - Enhance Web pages with DHTML, ActiveX controls, and applets
- Server-side scripts
  - Executed on server
  - Generate custom response for clients
  - Wide range of programmatic capabilities
  - Access to server-side software that extends server functionality

21.5 Accessing Web Servers

- Request documents from Web servers
  - Host names
  - Local Web servers
    - Access through machine name or `localhost`
  - Remote Web servers
    - Access through machine name
  - Domain name or Internet Protocol (IP) address
    - Domain name server (DNS)
      - Computer that maintains a database of host names and their corresponding IP address

21.6 Microsoft Internet Information Services (IIS)

- An enterprise-level Web server that is included with Windows

21.6.1 Microsoft Internet Information Services (IIS) 5.0

- FTP Site
  - Used for transferring large files across the Internet
- HTTP Site
  - Used most frequently to request documents from Web servers
- SMTP Virtual Server
  - Sends and receives electronic mail
- Web Site Content Directory
  - Directory containing the documents that clients will view

21.6.1 Microsoft Internet Information Services (IIS) 5.0
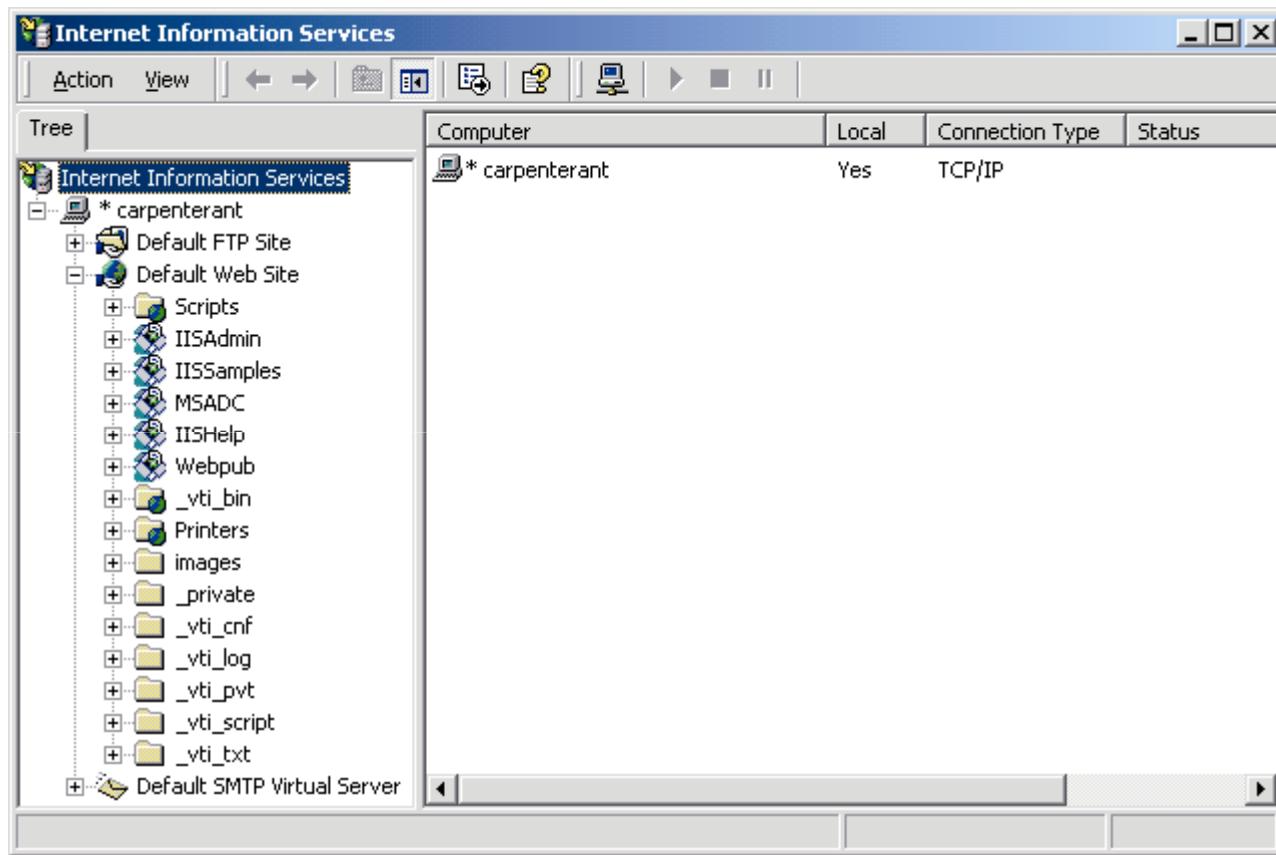
Fig. 21.3   **Internet Information Services** window of **Internet Services Manager**.

21.6.1 Microsoft Internet Information Services (IIS) 5.0

Fig. 21.4   **Virtual Directory Creation Wizard** welcome dialog.

21.6.1 Microsoft Internet Information Services (IIS) 5.0
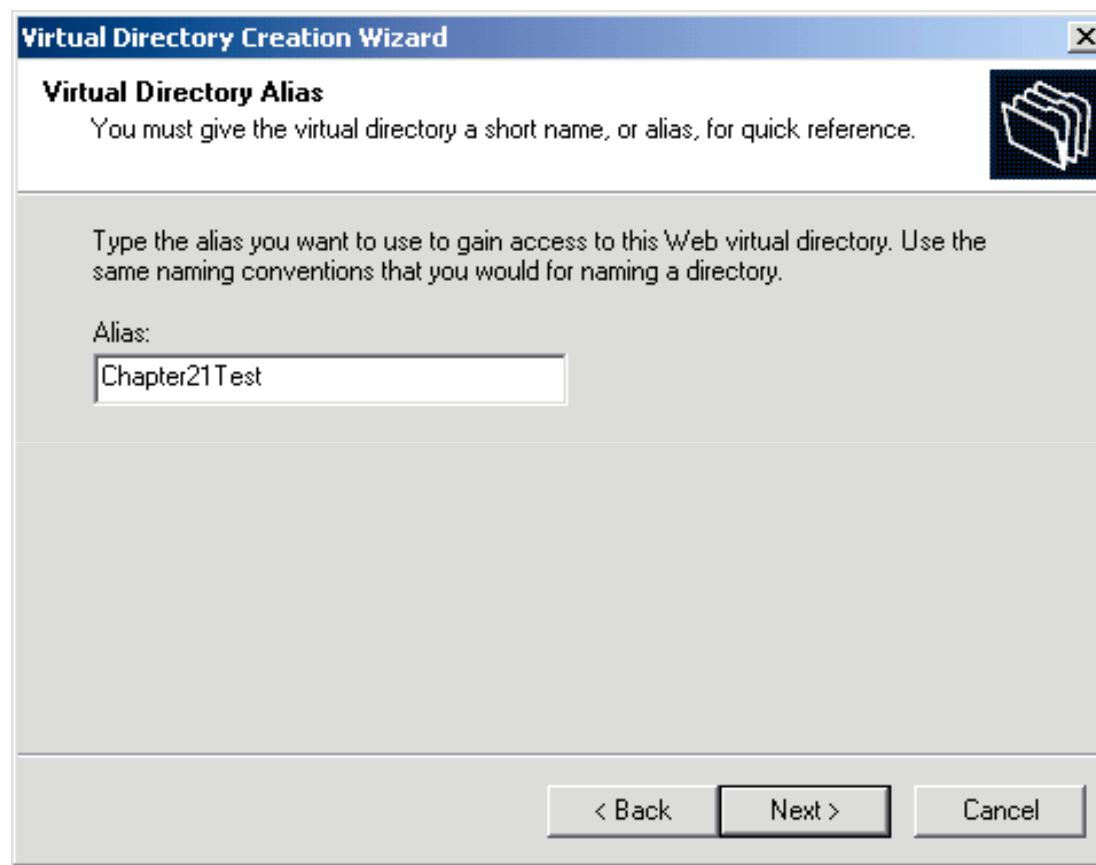
Fig. 21.5   **Virtual Directory Alias** dialog of the **Virtual Directory Creation Wizard**.

# 21.6.1 Microsoft Internet Information Services (IIS) 5.0
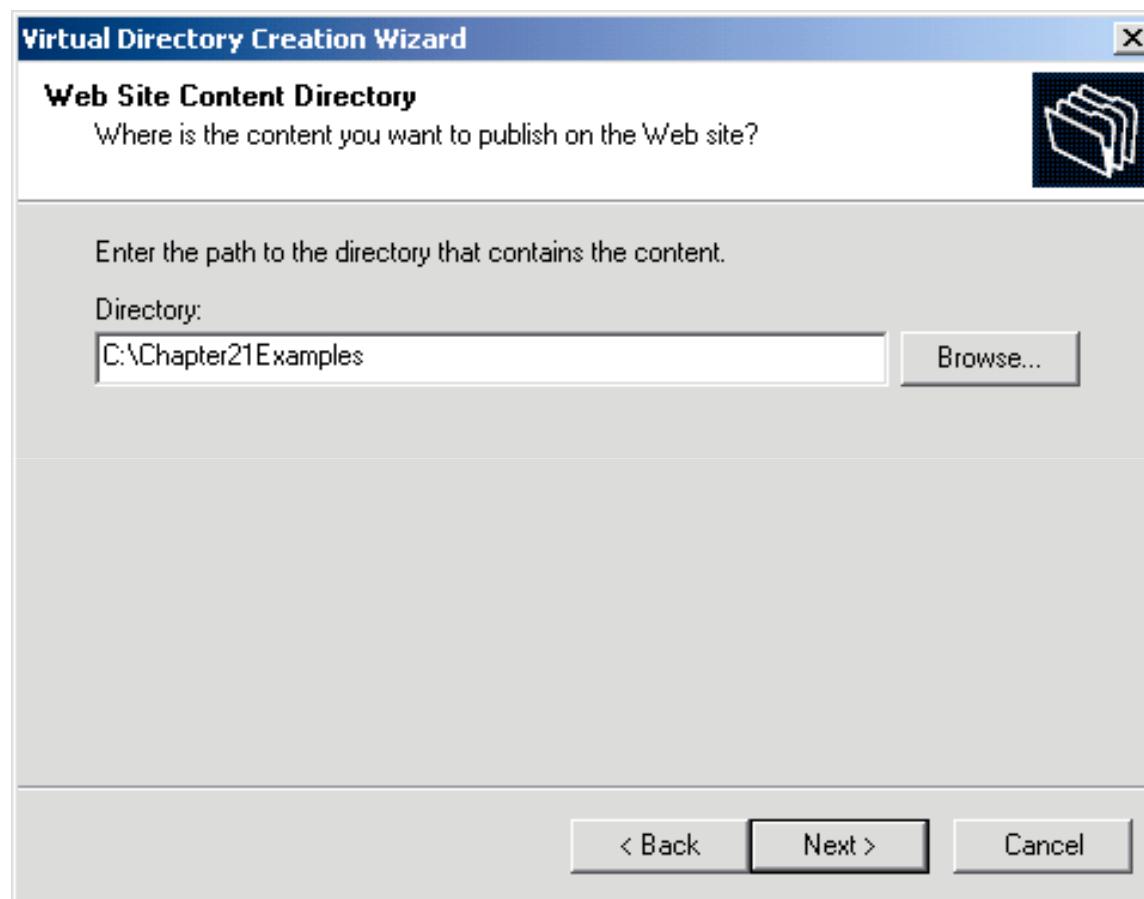
Fig. 21.6   **Web Site Content Directory** dialog of the **Virtual Directory Creation Wizard**.

21.6.1 Microsoft Internet Information Services (IIS) 5.0
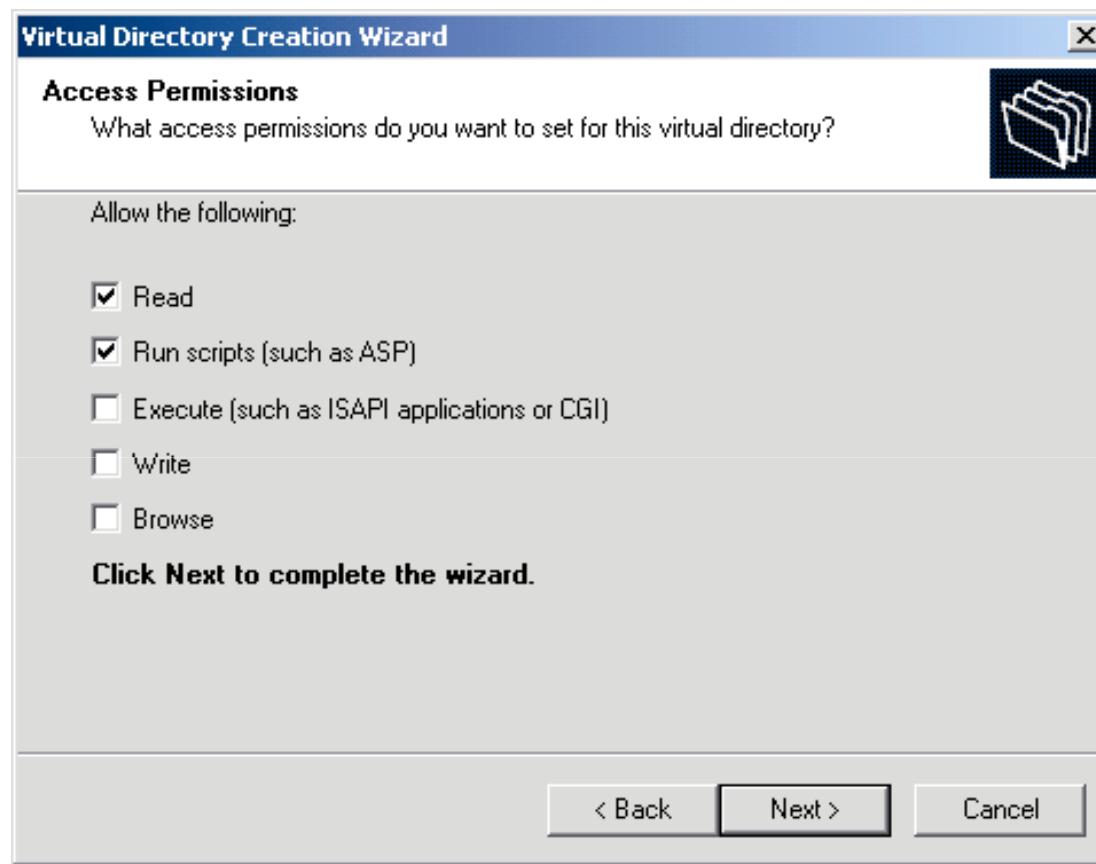
Fig. 21.7   **Access Permissions** dialog of the **Virtual Directory Creation Wizard**.

21.6.2 Microsoft Internet Information Services (IIS) 6.0
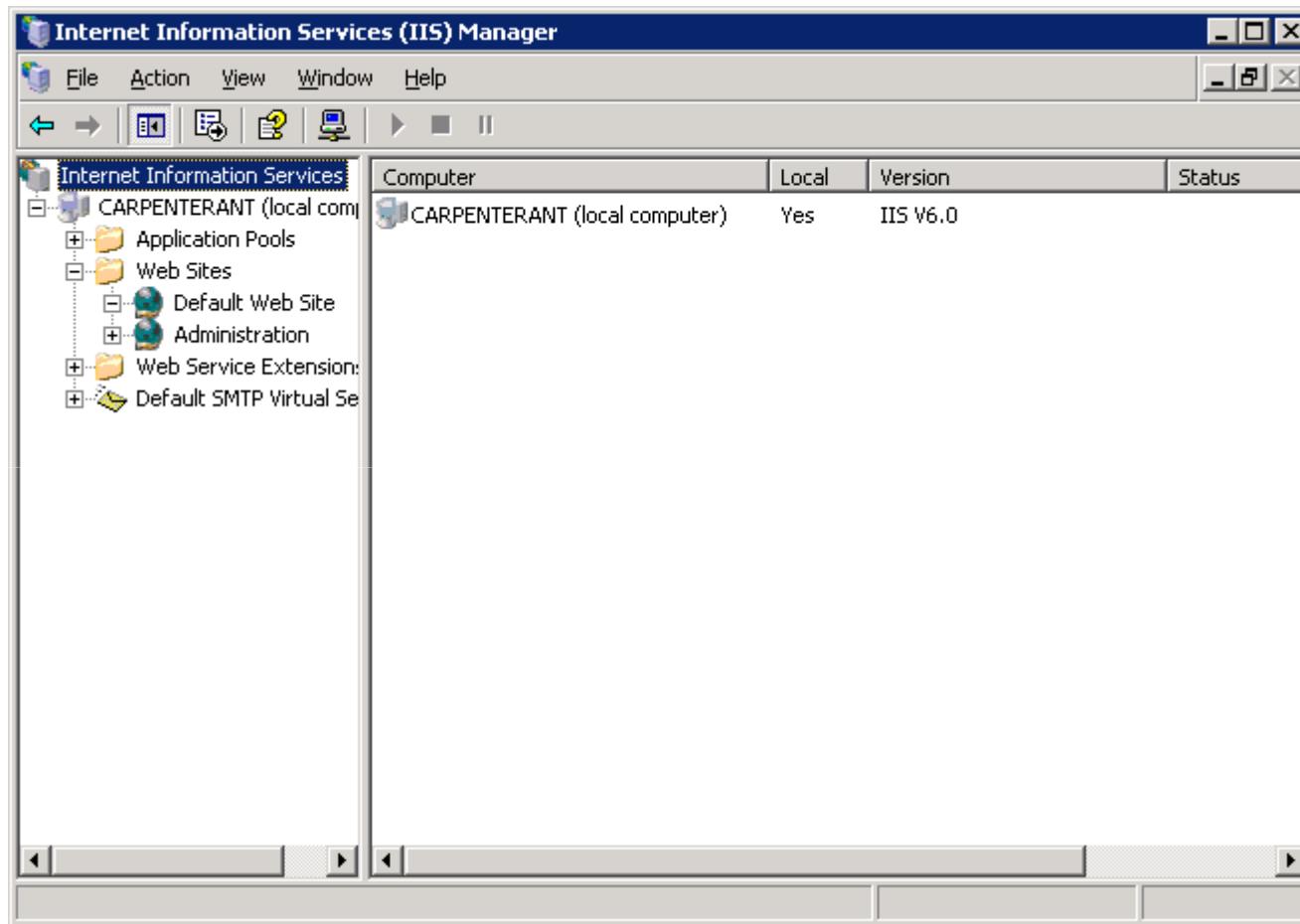
Fig. 21.8   **Internet Information (IIS) Services Manager** window.

21.6.2 Microsoft Internet Information Services (IIS) 6.0

Fig. 21.9   **Virtual Directory Creation Wizard** welcome dialog.

21.6.2 Microsoft Internet Information Services (IIS) 6.0
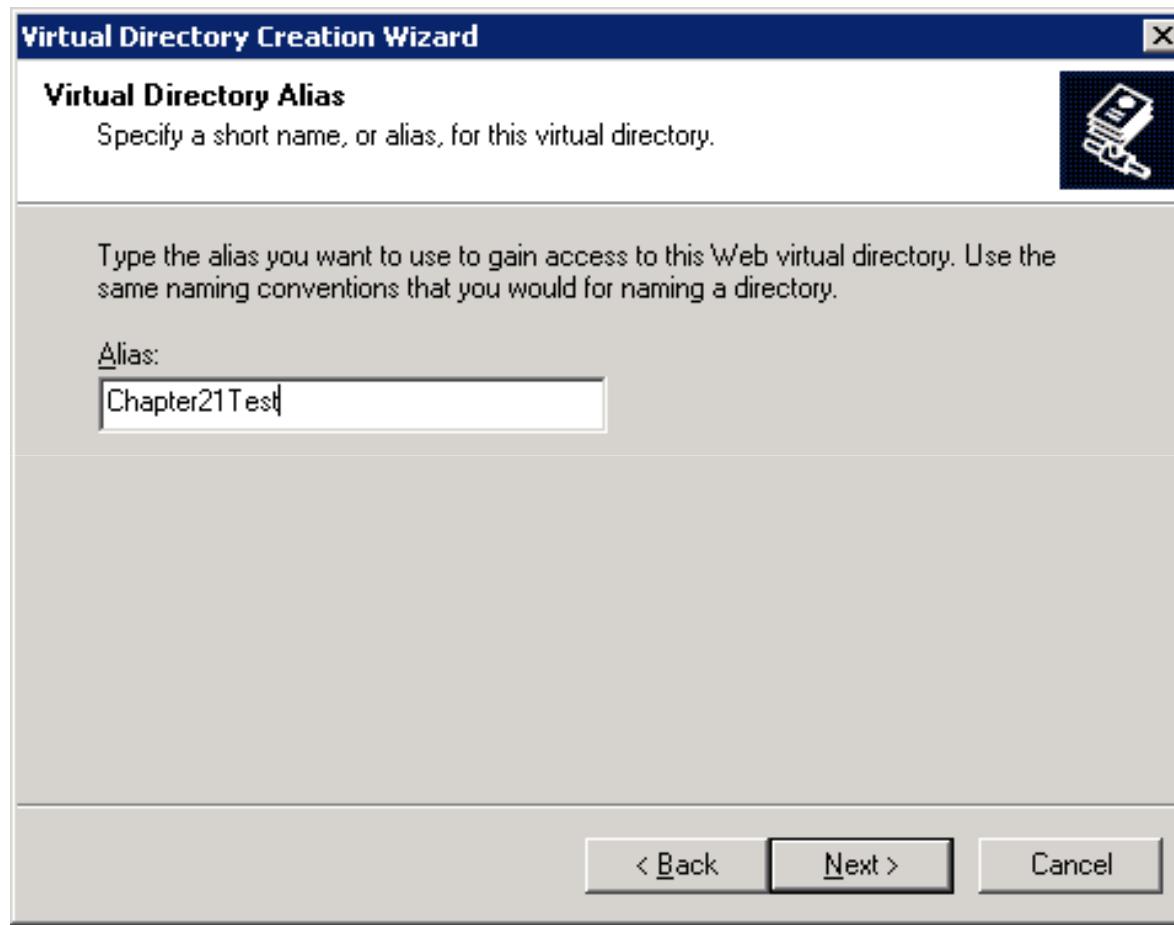
Fig. 21.10   **Virtual Directory Alias** dialog of the **Virtual Directory Creation Wizard**.

21.6.2 Microsoft Internet Information Services (IIS) 6.0
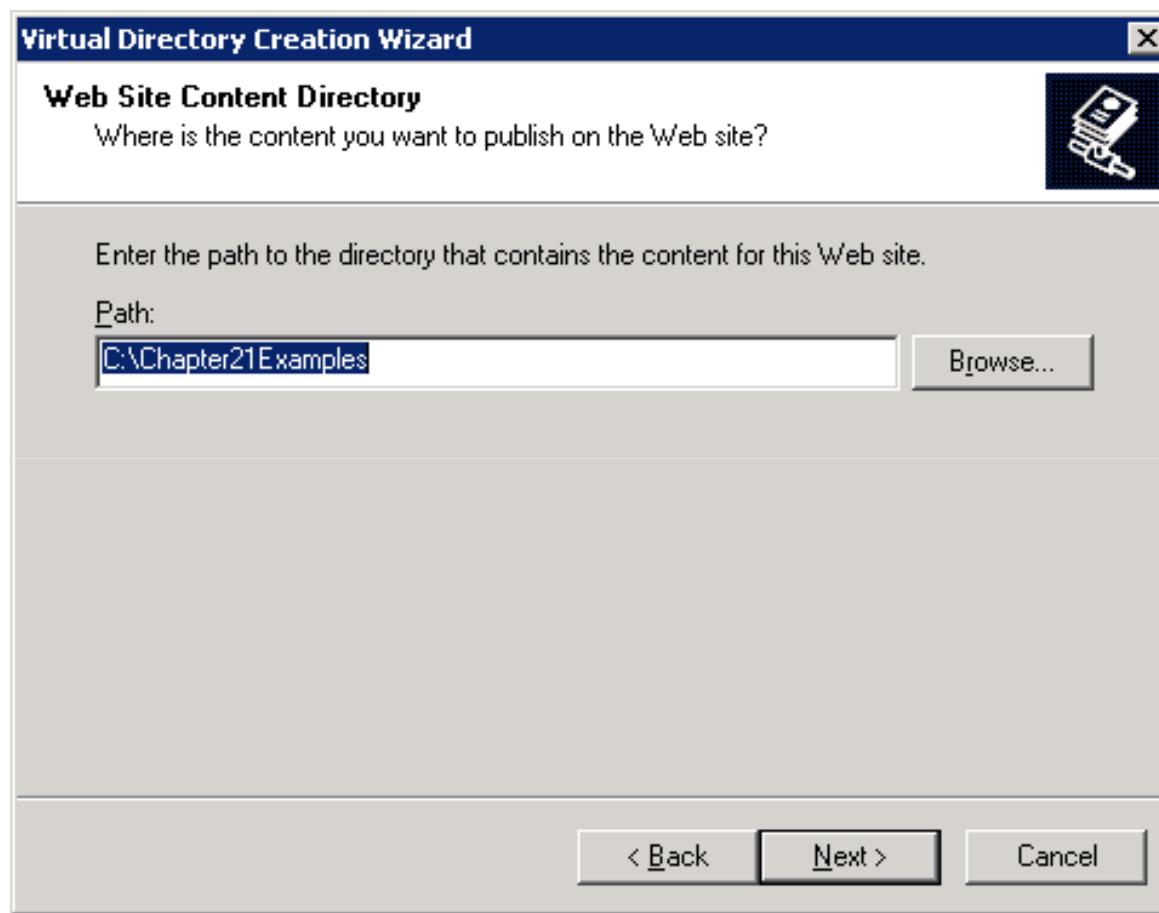
Fig. 21.11   **Web Site Content Directory** dialog of the **Virtual Directory Creation Wizard**.

21.6.2 Microsoft Internet Information Services (IIS) 6.0
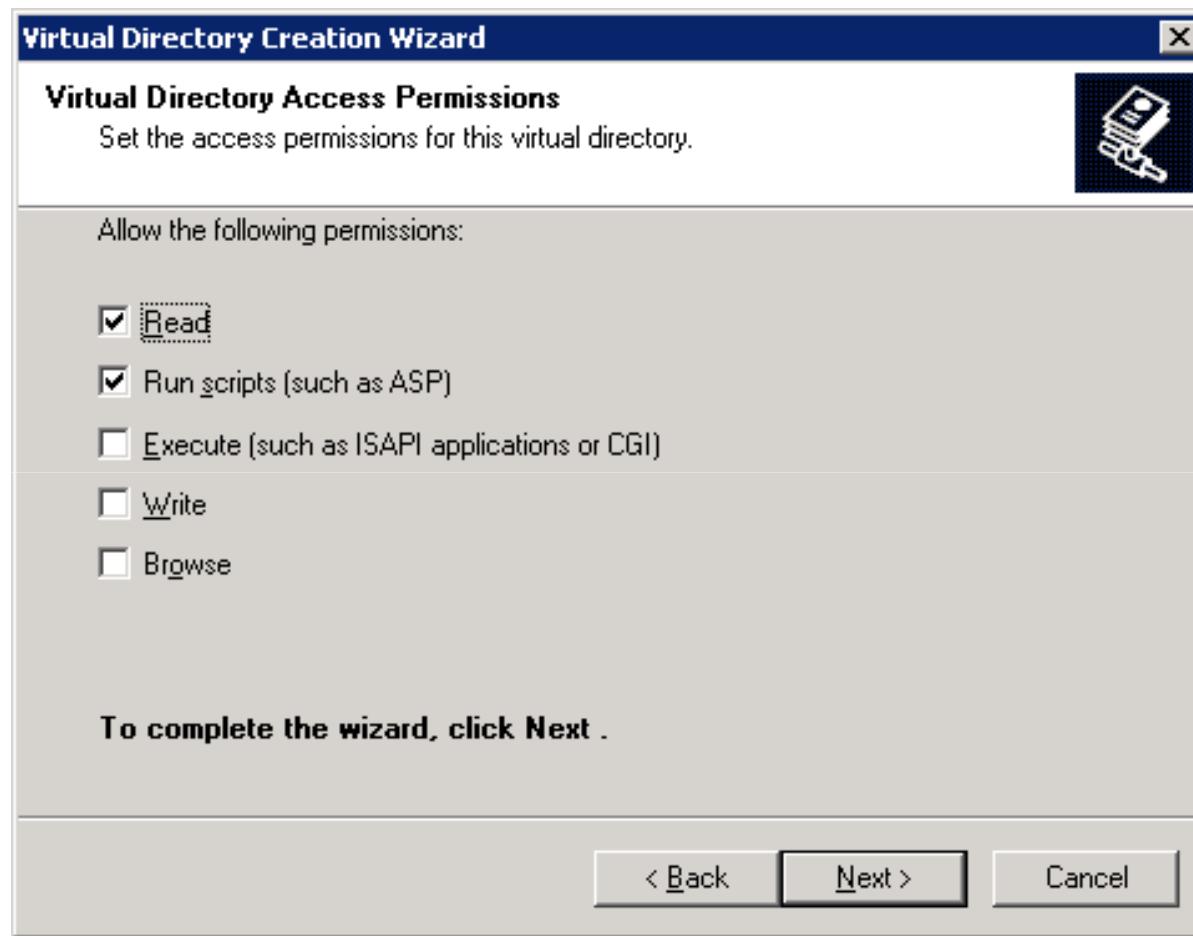
Fig. 21.12   **Access Permissions** dialog of the **Virtual Directory Creation Wizard**.

21.7 Apache Web Server

- Currently the most popular Web server
- Stability
- Efficiency
- Portability
- Open-source

21.7 Apache Web Server
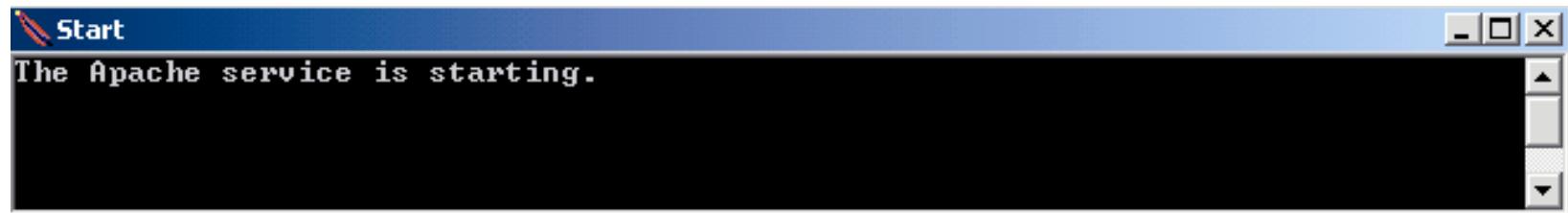
Fig. 21.13   Apache Web server starting. (Courtesy of The Apache Software Foundation.)

21.8 Requesting Documents

- Requesting five different documents
  - XHTML
  - ASP.NET
  - Perl
  - PHP
  - Python

21.8.1 XHTML

- Request XHTML documents from IIS 6.0 or Apache
    - Launch Internet Explorer
   - Enter XHTML document's location in Address field

21.8.1 XHTML
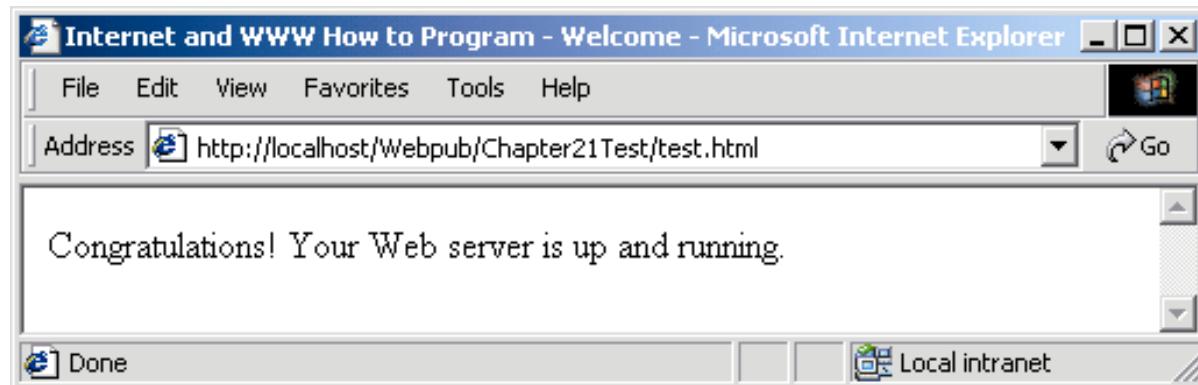
Fig. 21.14   Requesting test.html from IIS 5.
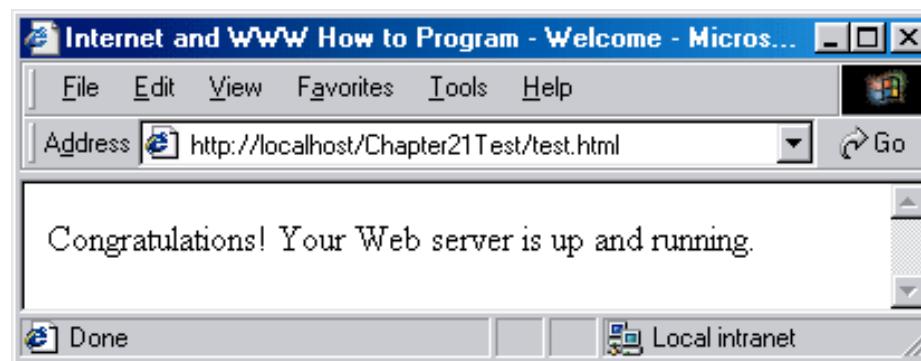
Fig. 21.15   Requesting test.html from IIS 6 or Apache.

21.8.2 ASP.NET

- Request ASP.NET document from IIS 5 or 6
  - Launch Internet Explorer
  - Enter ASP.NET document's location in Address field
- Apache support ASP Classic but doesn't support ASP.NET

21.8.2 ASP.NET
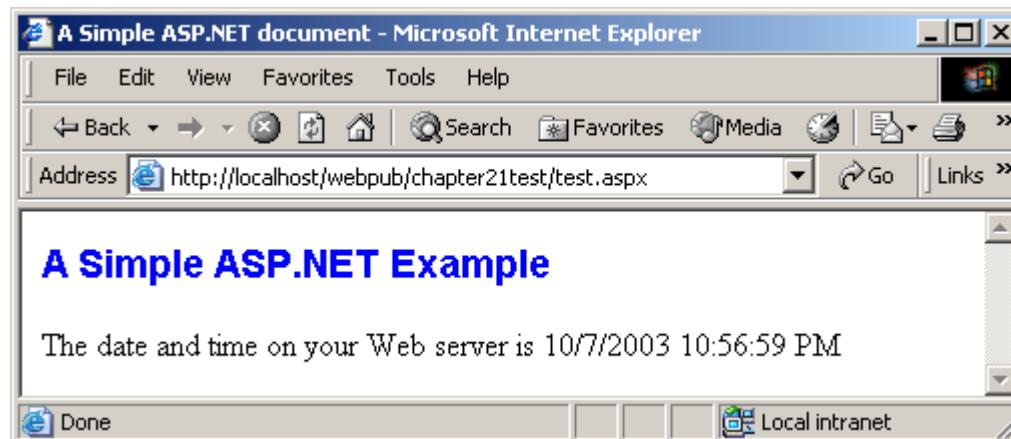
Fig. 21.16   Requesting test.aspx from IIS 5.
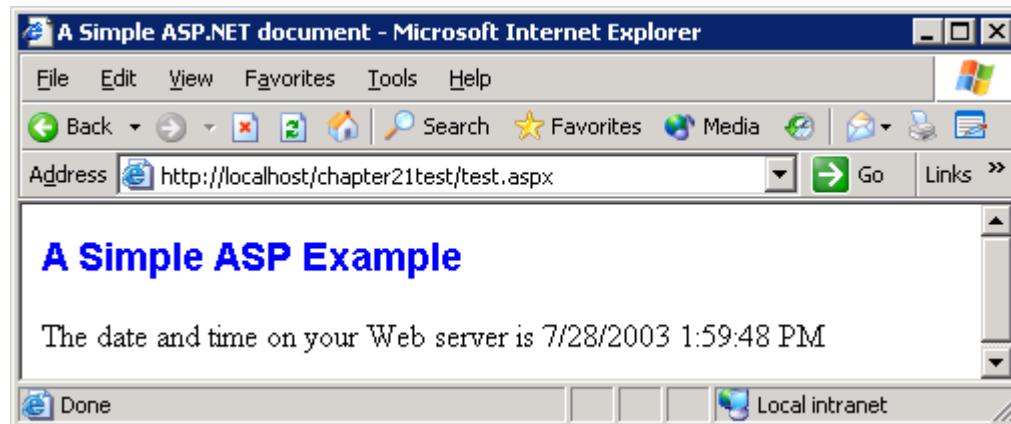
Fig. 21.17   Requesting test.aspx from IIS 6.

21.8.3 Perl

- Request Perl document from IIS 5 or 6
  - Launch Internet Explorer
  - Enter the Perl document's location in the Address field
- Request Perl document on Apache Web server
  - Put all Perl documents in `cgi-bin` directory
  - Launch Internet Explorer
 - Enter Perl document's location in Address field

# 21.8.3 Perl
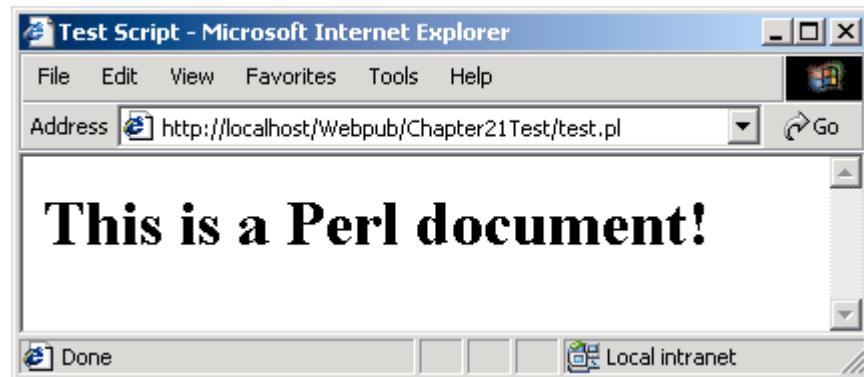
Fig. 21.18   Requesting test.pl from IIS 5.
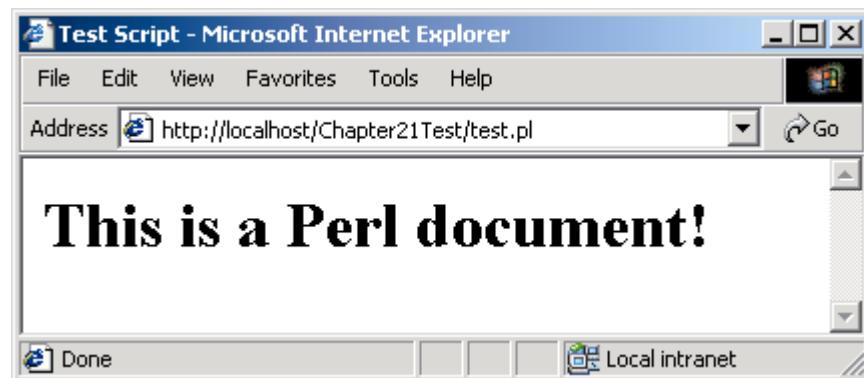
Fig. 21.19   Requesting test.pl from IIS 6.

21.8.3 Perl
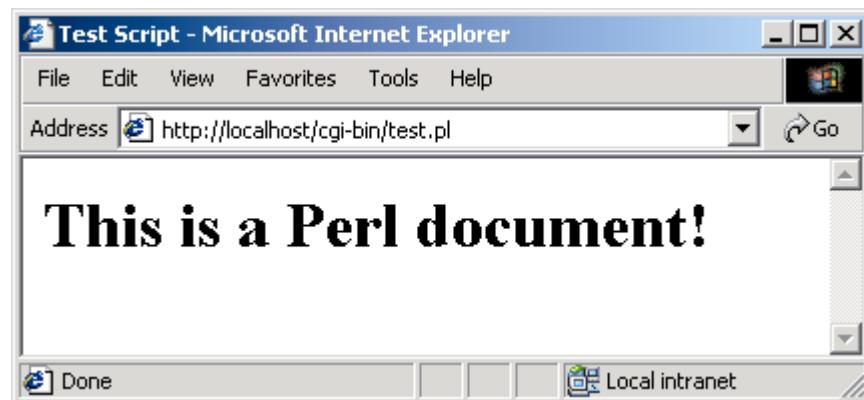
Fig. 21.20   Requesting test.pl from Apache.

21.8.4 PHP

- Request PHP documents from IIS 5 and 6
  - Launch Internet Explorer
  - Enter PHP document's location in the `Address` field

- Request PHP documents from Apache
  - Save PHP documents in the `htdocs` directory
  - Launch Internet Explorer
  - Enter PHP document's location in `Address` field

21.8.4 PHP

A simple PHP document - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://localhost/Webpub/Chapter21Test/test.php

This is a PHP document!

Done   Local intranet
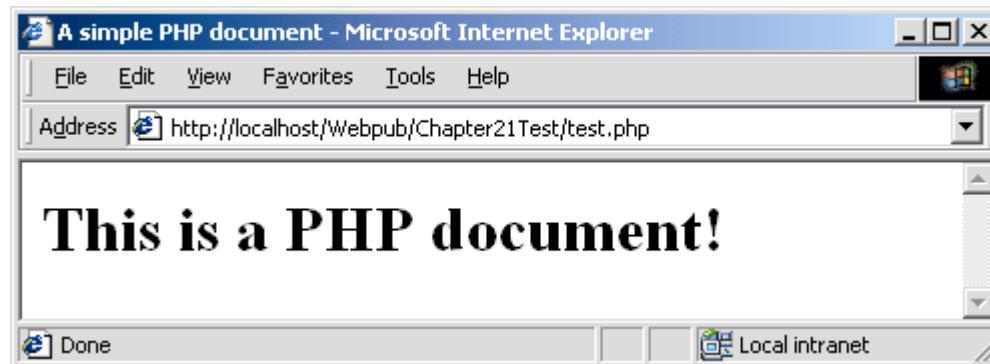
Fig. 21.21   Requesting test.php from IIS 5.

A simple PHP document - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://localhost/Chapter21Test/test.php

This is a PHP document!

Done   Local intranet
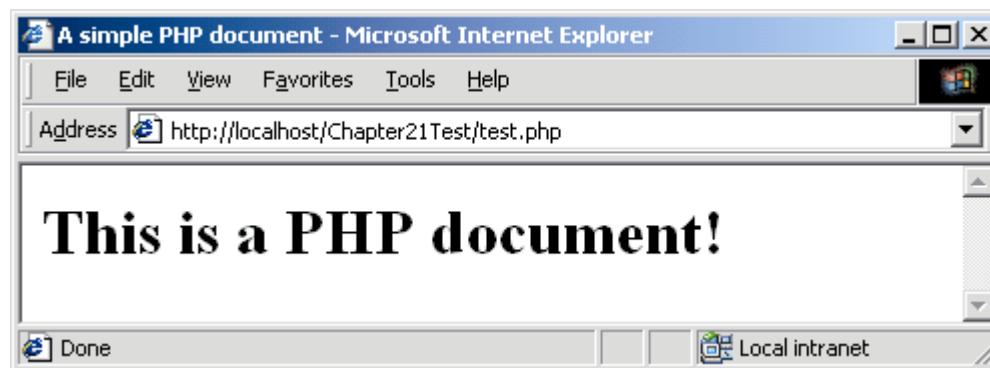
Fig. 21.22   Requesting test.php from IIS 6.

21.8.4 PHP
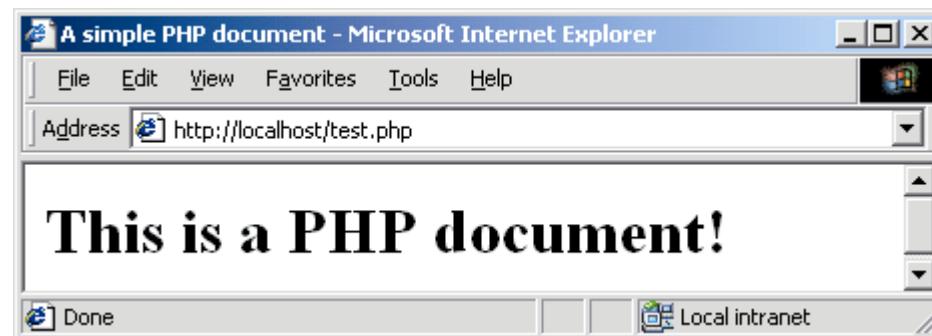
Fig. 21.23   Requesting test.php from Apache.

21.8.5 Python

- Request Python documents from IIS 5 and 6
  - Launch Internet Explorer
  - Enter Python document's location in the Address field
- Request Python documents from Apache Web server
  - Put Python documents in `cgi-bin` directory
  - Launch Internet Explorer
 - Enter Python document's location in Address field

# 21.8.5 Python
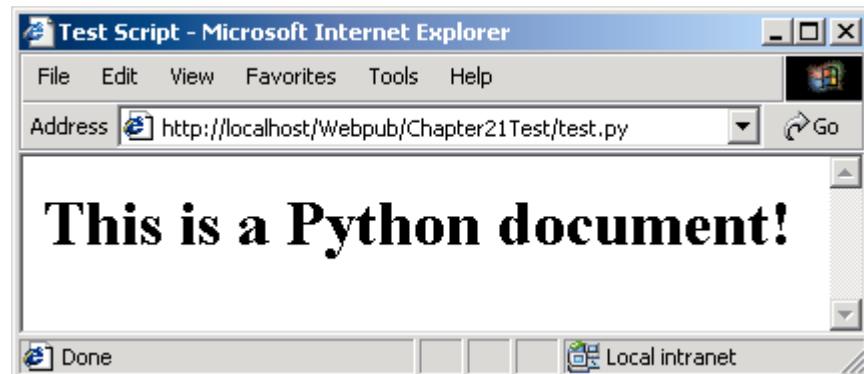
Fig. 21.24   Requesting test.py from IIS.
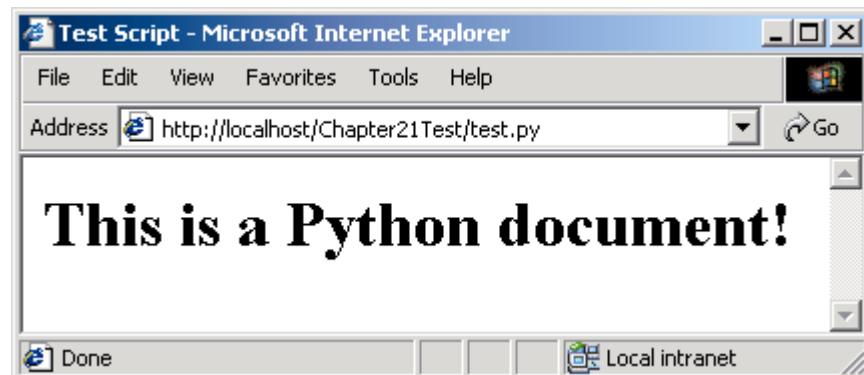
Fig. 21.25   Requesting test.py from IIS 6.

21.8.5 Python
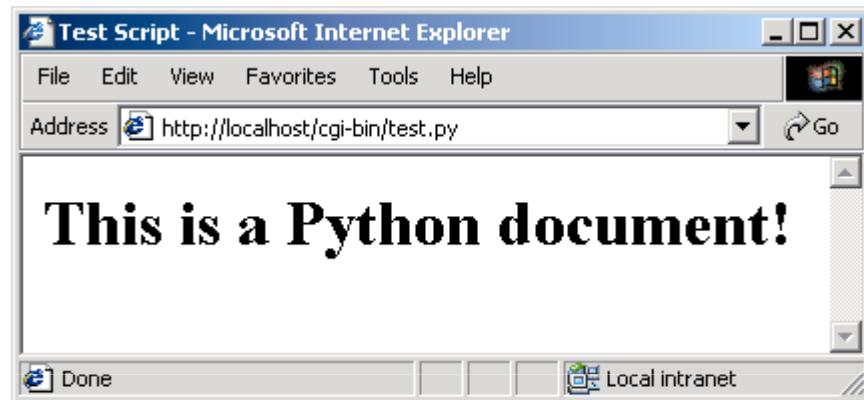
Fig. 21.26   Requesting test.py from Apache.

21.9 Web Resources

- `www.microsoft.com/msdownload/ntoptionpack/askwiz.asp`
- `www.w3.org/Protocols`
- `www.apache.org`
- `httpd.apache.org`
- `httpd.apache.org/docs-2.0`
- `www.apacheweek.com`
- `linuxtoday.com/stories/18780.html`
- `www.iisanswers.com`
- `www.iisadministrator.com`