

# Internet Fundamentals

## Lecture-23

- **Web Servers**
- **Apache**
- **IIS**

# Web Servers

## (IIS and Apache)

### Outline

- 21.1 Introduction**
- 21.2 HTTP Request Types**
- 21.3 System Architecture**
- 21.4 Client-Side Scripting versus Server-Side Scripting**
- 21.5 Accessing Web Servers**
- 21.6 Microsoft Internet Information Services (IIS)**
  - 21.6.1 Microsoft Internet Information Services (IIS) 5.0**
  - 21.6.2 Microsoft Internet Information Services (IIS) 6.0**
- 21.7 Apache Web Server**
- 21.8 Requesting Documents**
  - 21.8.1 XHTML**
  - 21.8.2 ASP.NET**
  - 21.8.3 Perl**
  - 21.8.4 PHP**
  - 21.8.5 Python**
- 21.9 Web Resources**

# 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
- URL (Uniform Resource Locator)
- 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

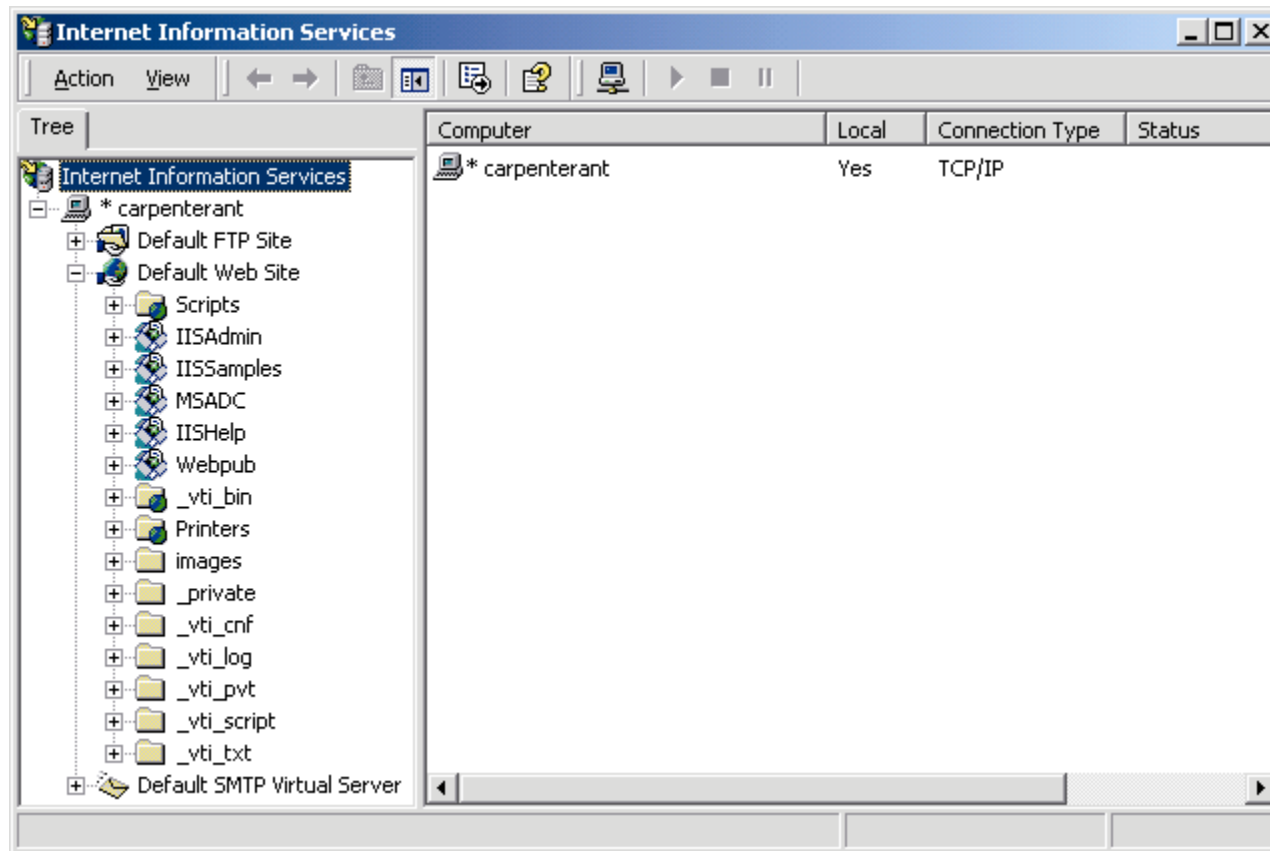


Fig. 21.3 Internet Information Services window of Internet Services Manager.

## 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

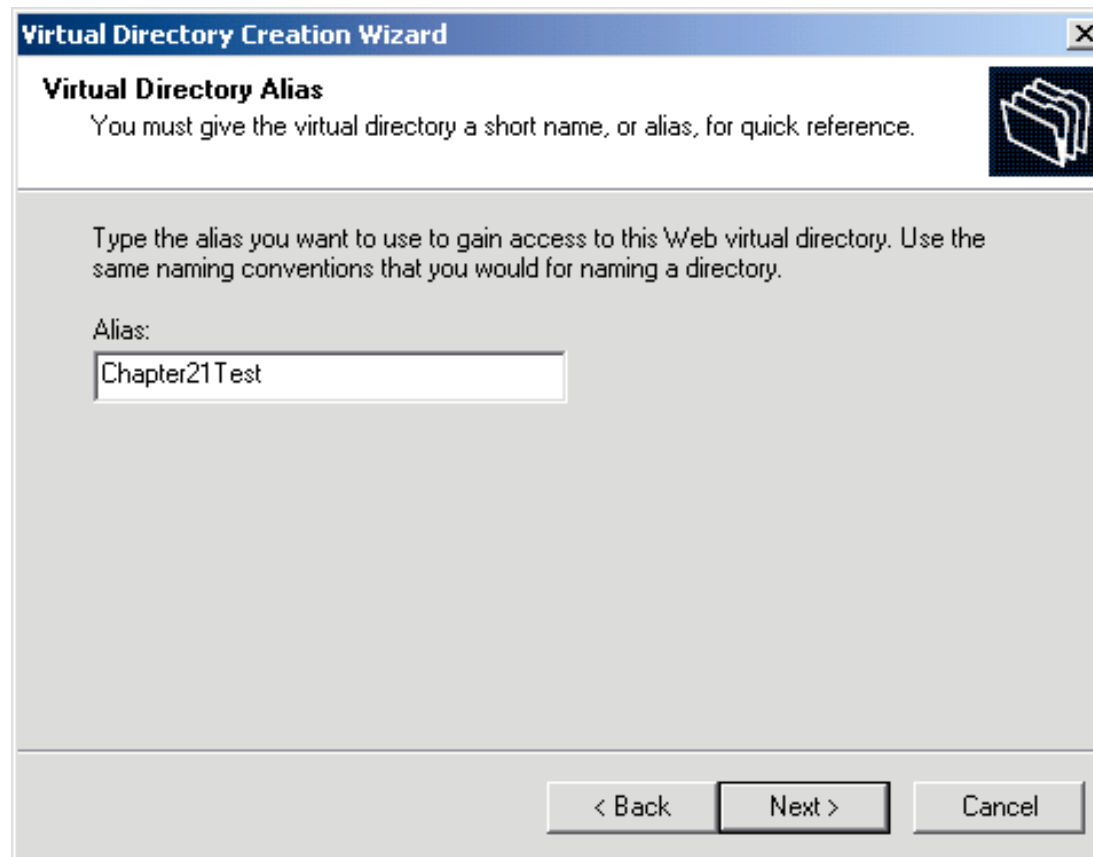


Fig. 21.5 Virtual Directory Alias dialog of the Virtual Directory Creation Wizard.

## 21.6.1 Microsoft Internet Information Services (IIS) 5.0

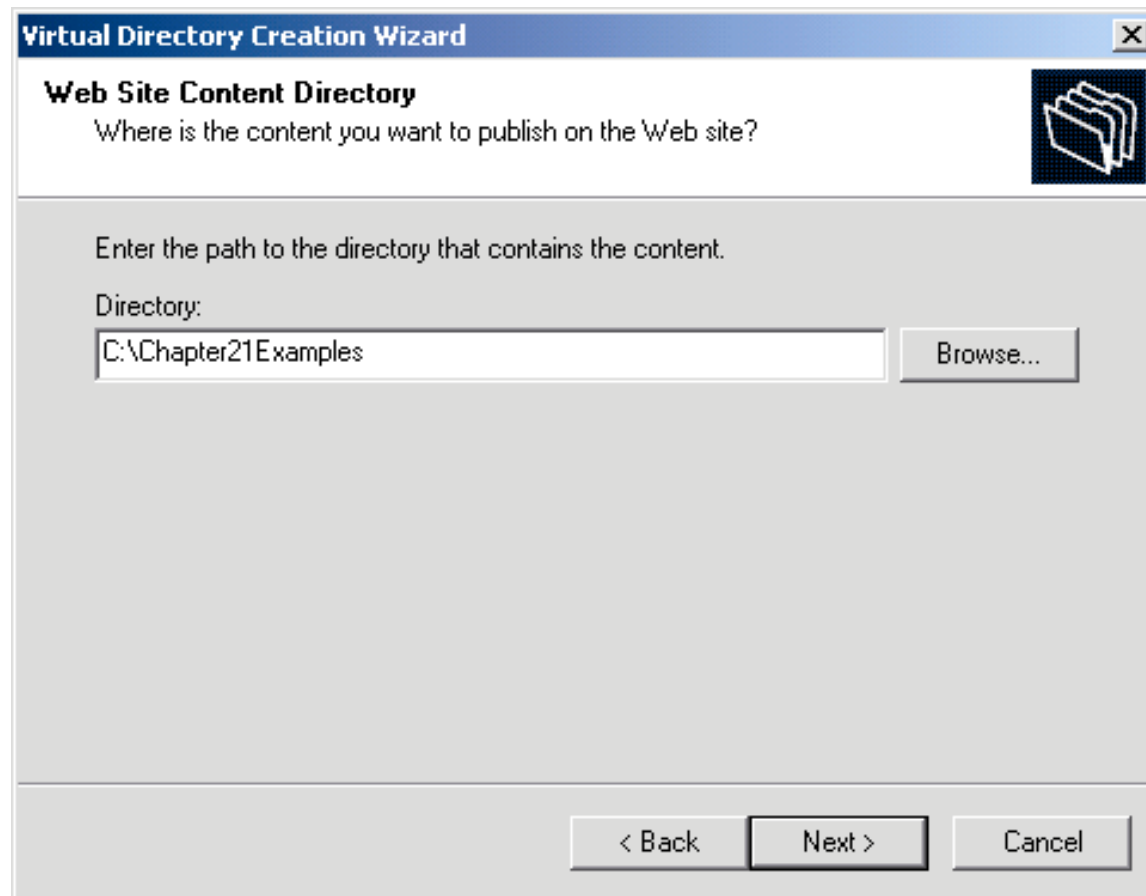


Fig. 21.6 **Web Site Content Directory** dialog of the **Virtual Directory Creation Wizard**.



## 21.6.1 Microsoft Internet Information Services (IIS) 5.0

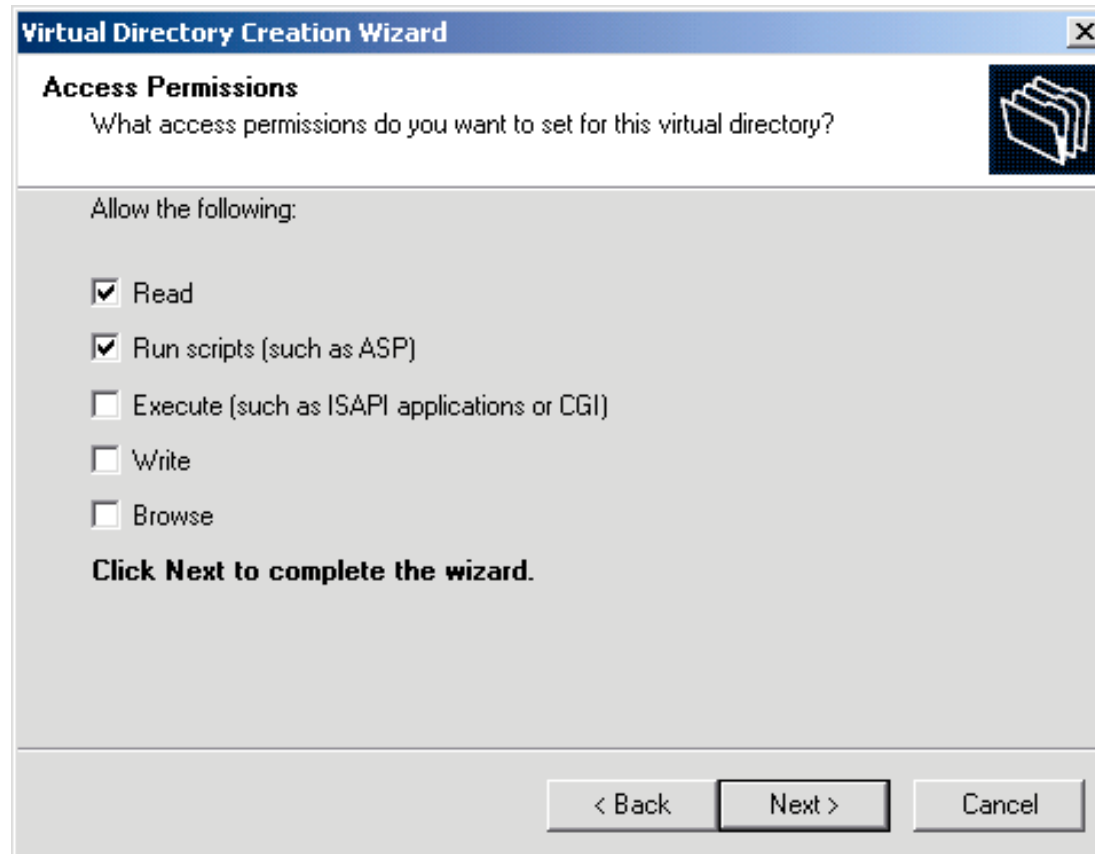


Fig. 21.7 Access Permissions dialog of the Virtual Directory Creation Wizard.

## 21.6.2 Microsoft Internet Information Services (IIS) 6.0

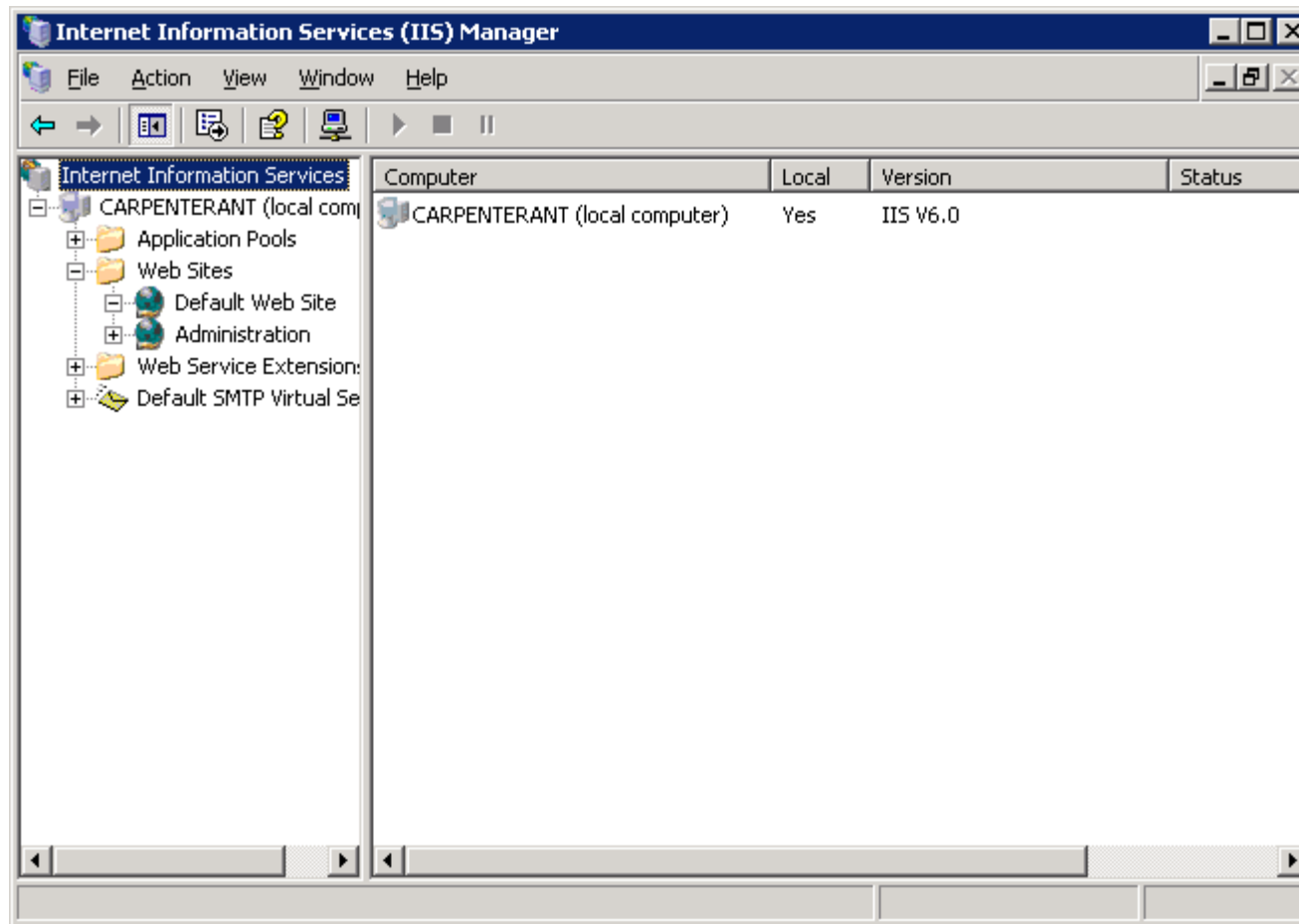


Fig. 21.8 Internet Information (IIS) Services Manager window.

## 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

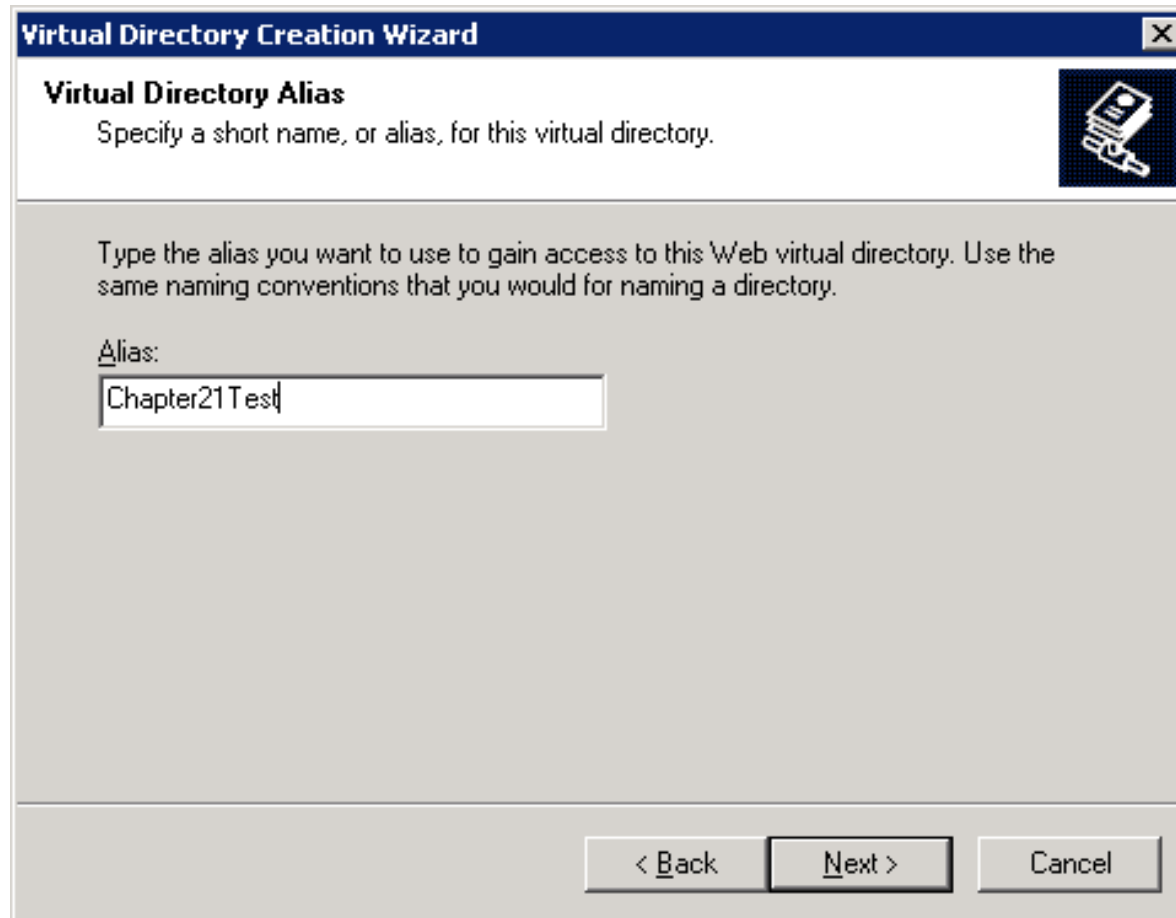


Fig. 21.10 Virtual Directory Alias dialog of the Virtual Directory Creation Wizard.

## 21.6.2 Microsoft Internet Information Services (IIS) 6.0

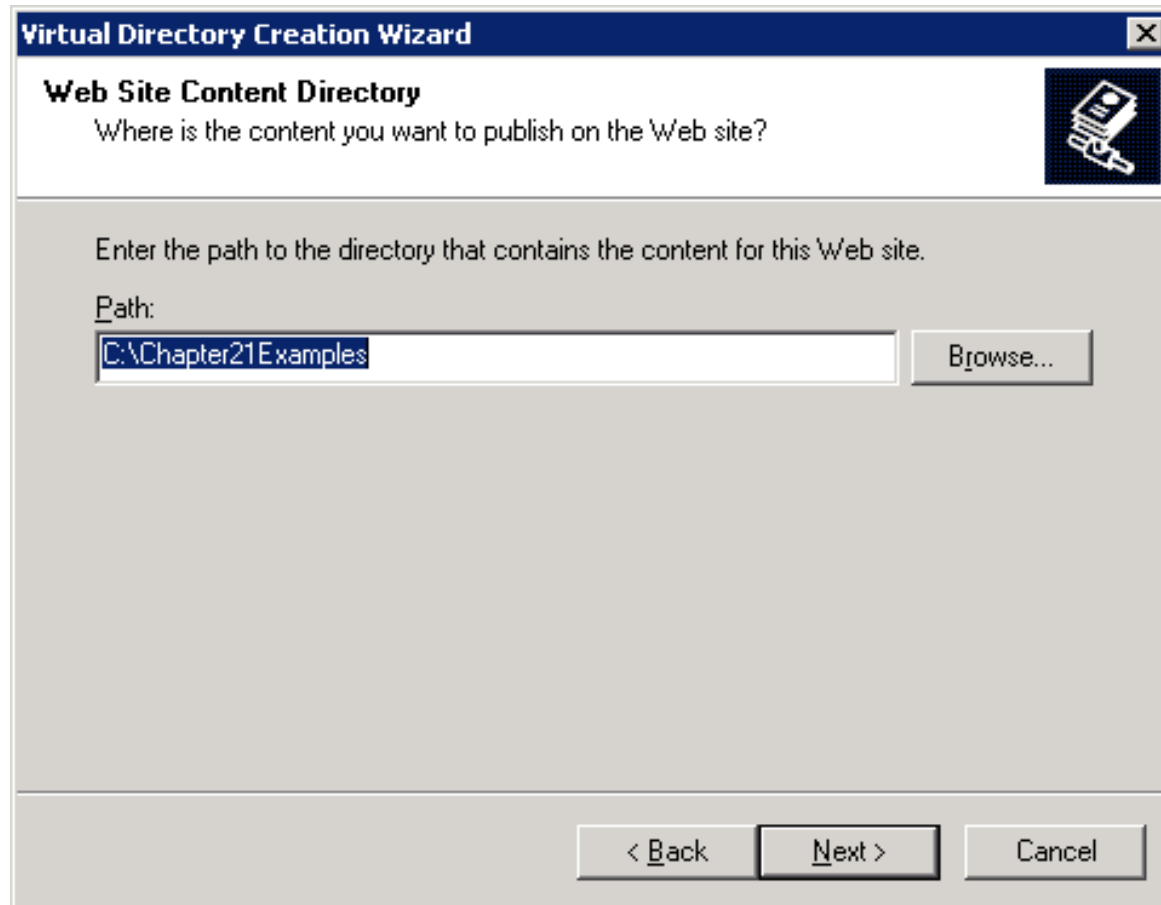


Fig. 21.11 Web Site Content Directory dialog of the Virtual Directory Creation Wizard.

## 21.6.2 Microsoft Internet Information Services (IIS) 6.0

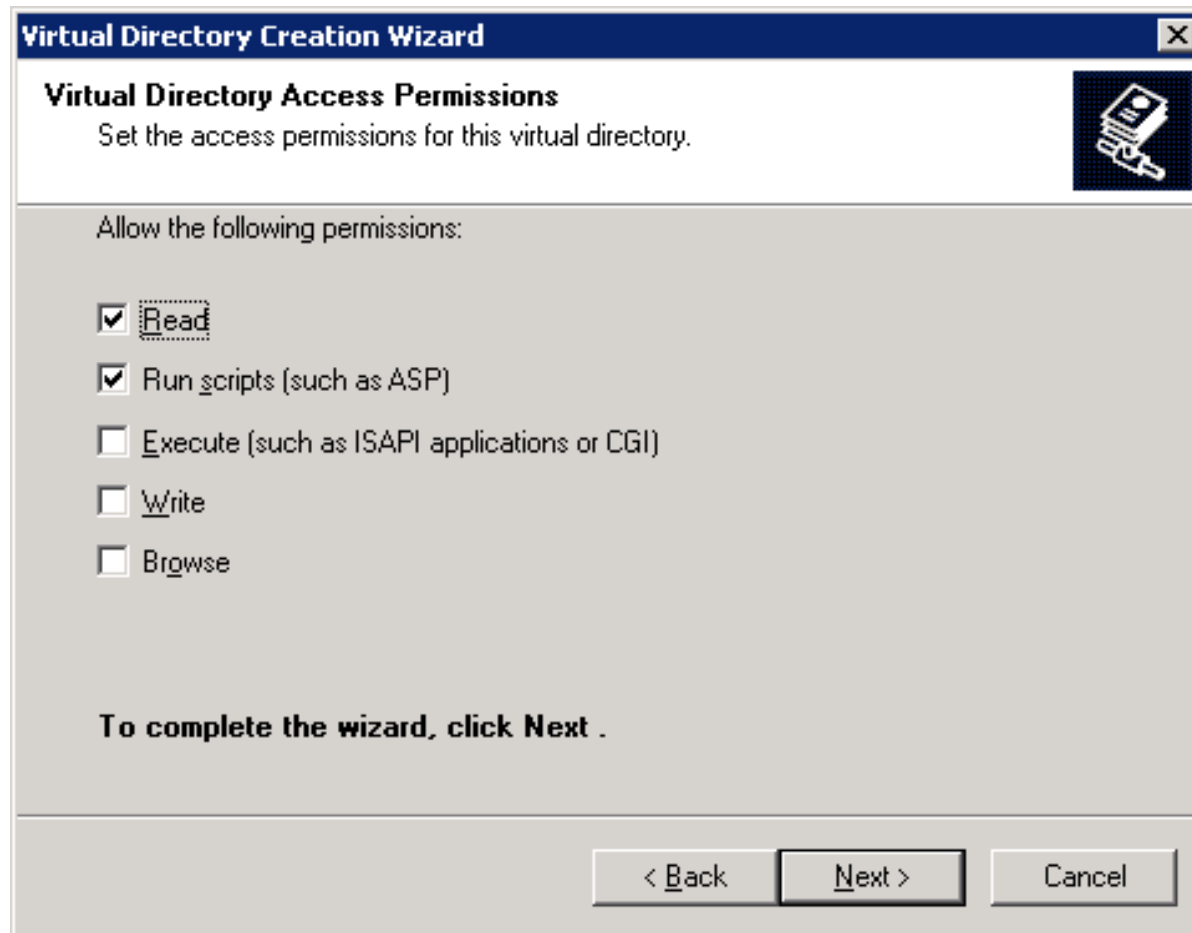


Fig. 21.12 Access Permissions dialog of the Virtual Directory Creation Wizard.

## 21.7 Apache Web Server

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

## 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

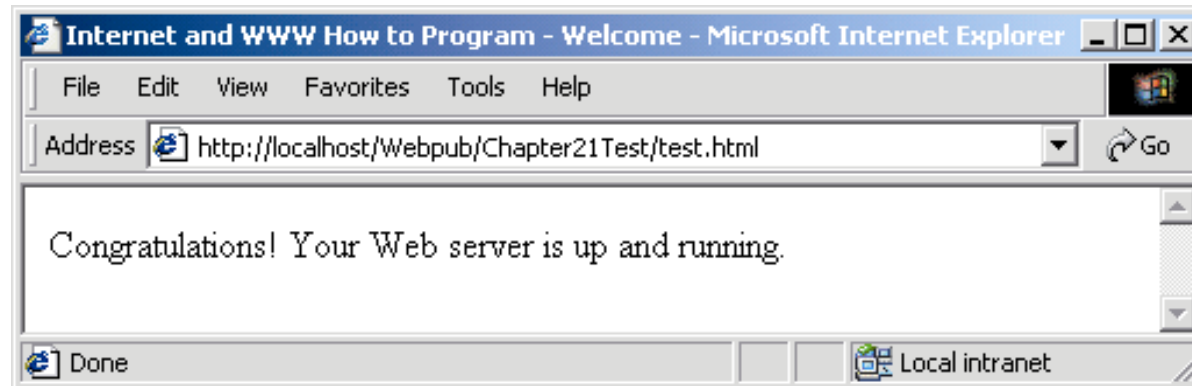


Fig. 21.14 Requesting test.html from IIS 5.

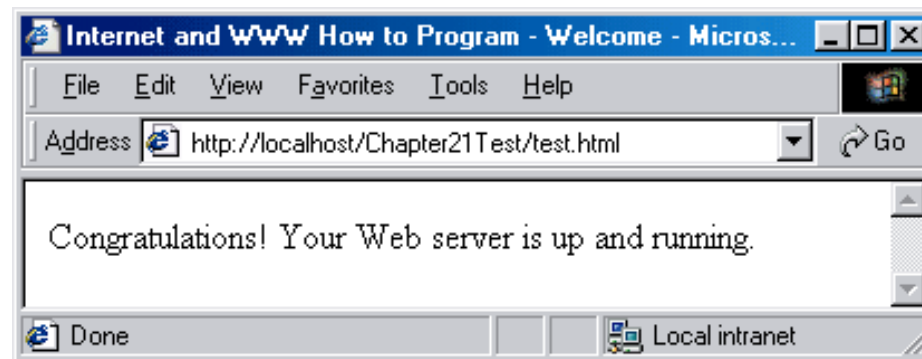


Fig. 21.15 Requesting test.html from IIS 6 or Apache.

## 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

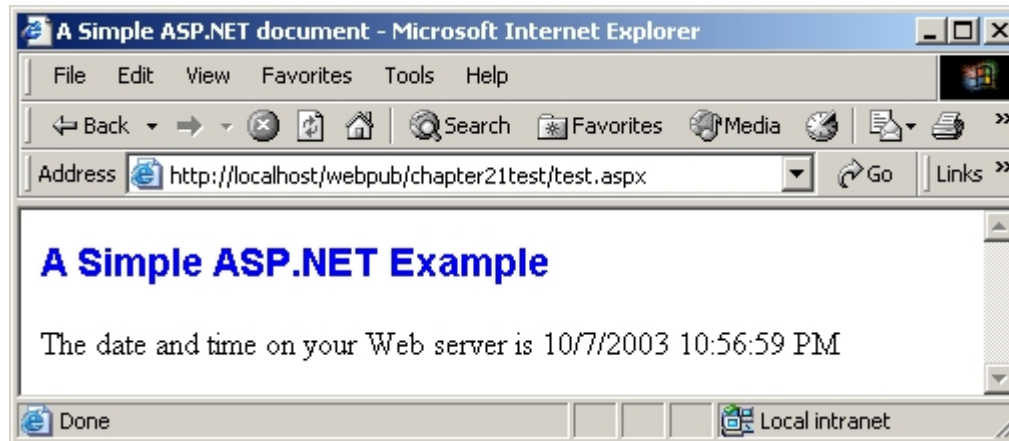


Fig. 21.16 Requesting test.aspx from IIS 5.

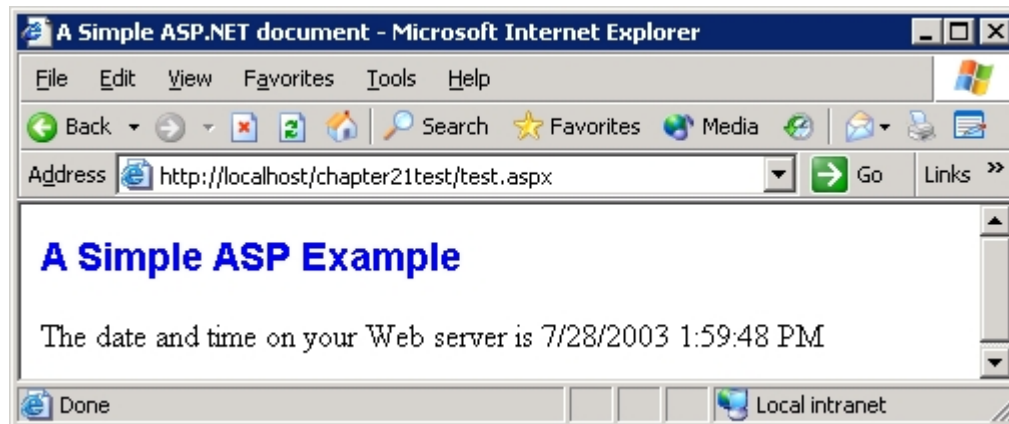


Fig. 21.17 Requesting test.aspx from IIS 6.

## 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

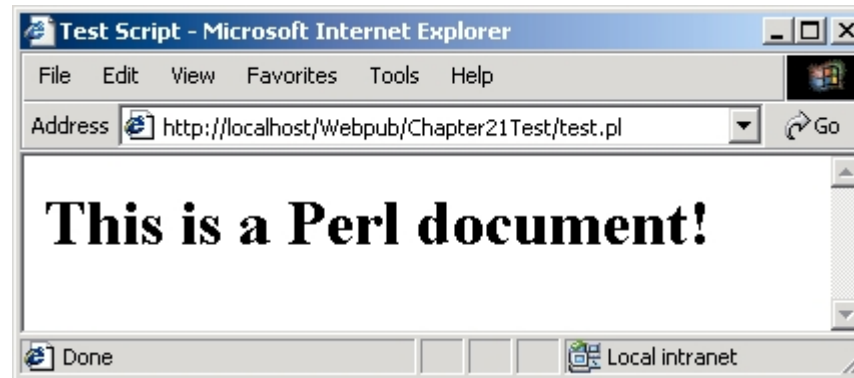


Fig. 21.18 Requesting test.pl from IIS 5.

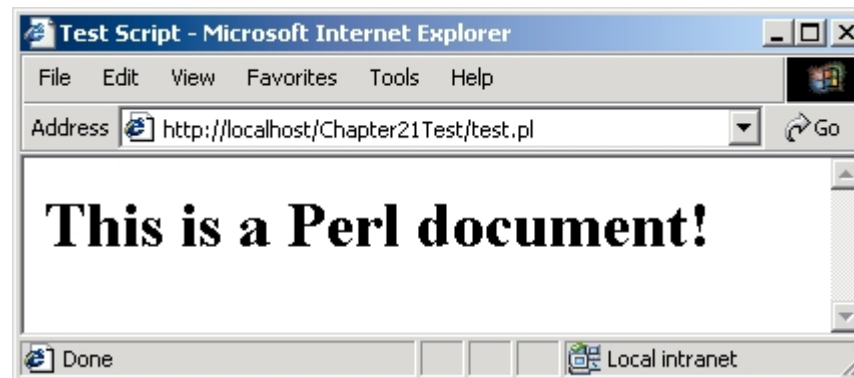


Fig. 21.19 Requesting test.pl from IIS 6.

## 21.8.3 Perl

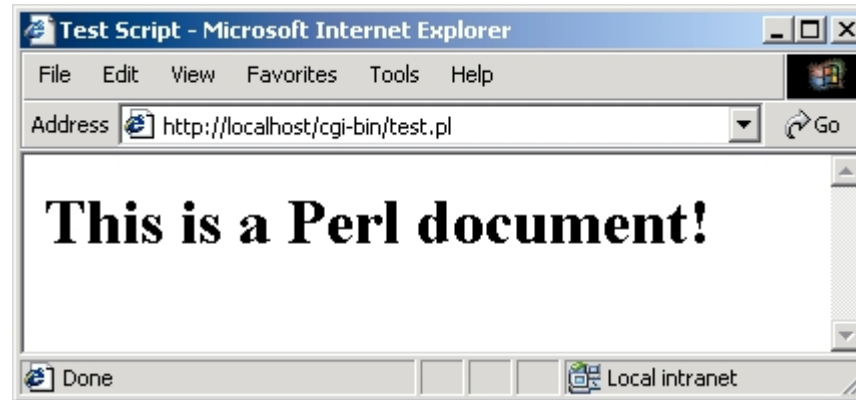


Fig. 21.20 Requesting test.pl from Apache.



## 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

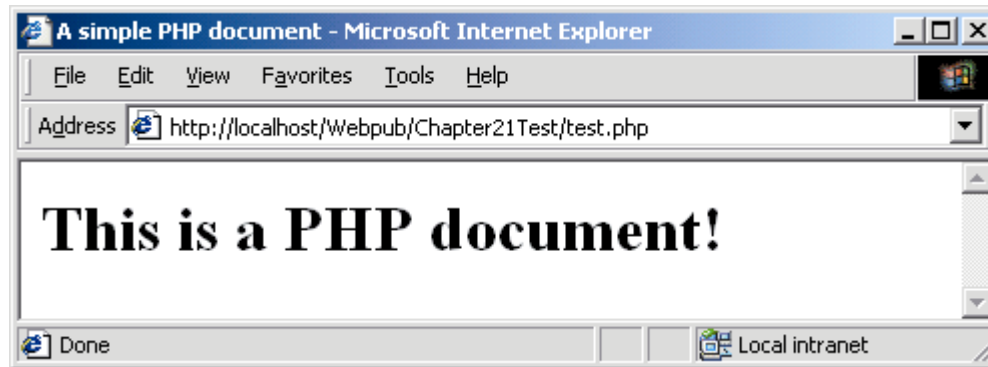


Fig. 21.21 Requesting test.php from IIS 5.

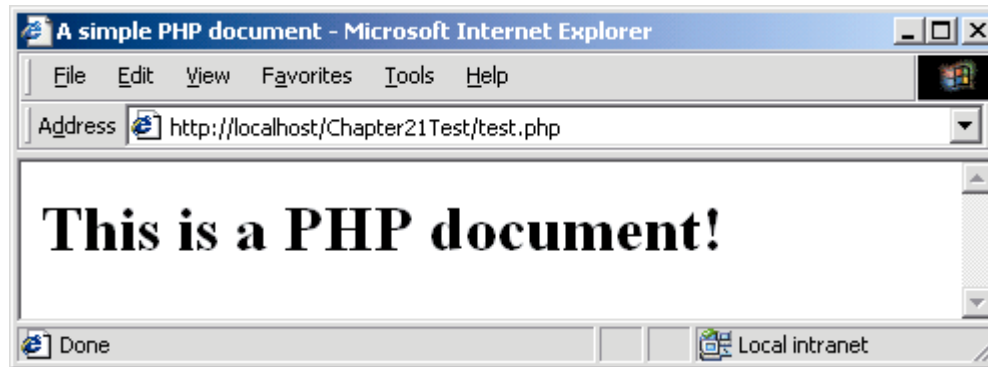


Fig. 21.22 Requesting test.php from IIS 6.

## 21.8.4 PHP

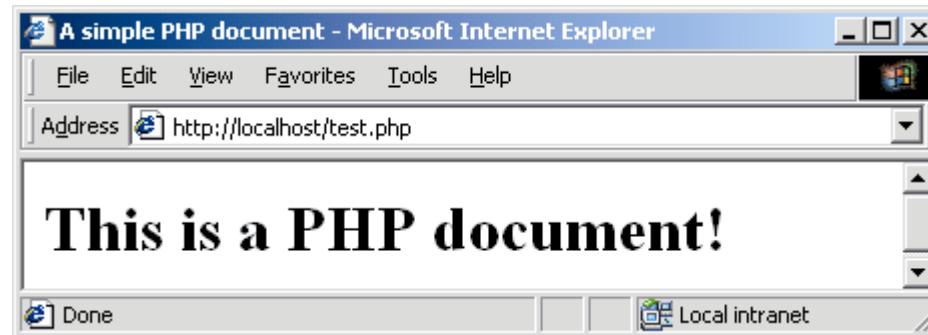


Fig. 21.23 Requesting test.php from Apache.

## 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

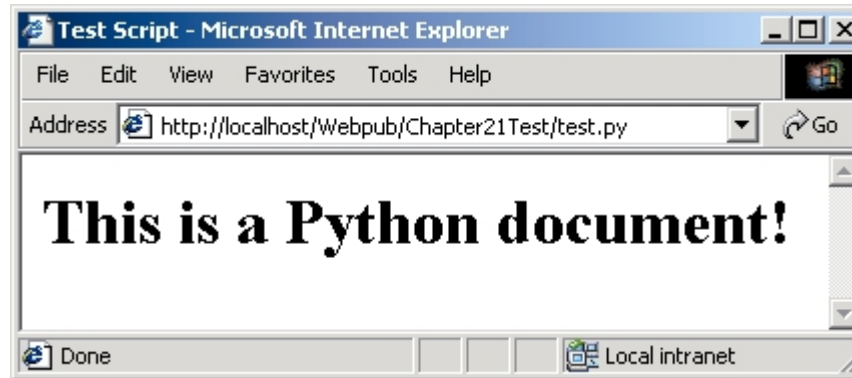


Fig. 21.24 Requesting test.py from IIS.

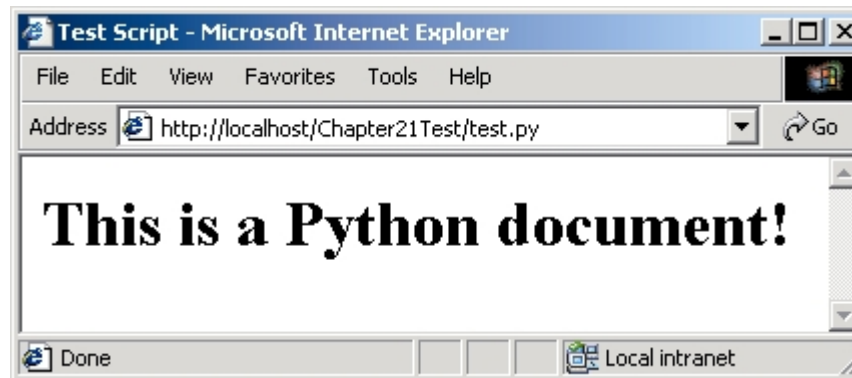


Fig. 21.25 Requesting test.py from IIS 6.

## 21.8.5 Python



Fig. 21.26 Requesting test.py from Apache.

## 21.9 Web Resources

- [www.microsoft.com/msdownload/ntoptionpack/askwiz.asp](http://www.microsoft.com/msdownload/ntoptionpack/askwiz.asp)
- [www.w3.org/Protocols](http://www.w3.org/Protocols)
- [www.apache.org](http://www.apache.org)
- [httpd.apache.org](http://httpd.apache.org)
- [httpd.apache.org/docs-2.0](http://httpd.apache.org/docs-2.0)
- [www.apacheweek.com](http://www.apacheweek.com)
- [linuextoday.com/stories/18780.html](http://linuextoday.com/stories/18780.html)
- [www.iisanswers.com](http://www.iisanswers.com)
- [www.iisadministrator.com](http://www.iisadministrator.com)