Chapter 21 – Web Servers (IIS and Apache)

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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	Microsoft	Apache Software
	Corporation	Corporation	Foundation
Version	5.0	6.0	2.0.47
Released	2/17/00	3/28/03	7/10/03
Platforms	Windows 2000,	Windows Server 2003	Windows NT/2000/XP,
	Windows XP		Mac OS X, Linux and
			other UNIX-based
			platforms,
			experimentally supports
			Windows 95/98
Brief	The most popular	The newest release of	Currently the most
description	Web server for	IIS from Microsoft.	popular Web server.
	Windows 2000.		
Price	Included with	Included with	Freeware.
	Windows 2000	Windows Server 2003	
	and Windows		
	XP.		
Fig. 21.1 Web	servers discusse	ed 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



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



- 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



Internet Information Services				<u>_ D ×</u>
_ Action Yiew _ ← → m I] 🖪 😫 💂 🕨 🗉 👘			
Tree	Computer	Local	Connection Type	Status
Internet Information Services Image: Services	■* carpenterant	Yes	TCP/IP	
	<u> </u>			<u>)</u>

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





Fig. 21.4 Virtual Directory Creation Wizard welcome dialog.



Virtual Directory Creation Wizard
Virtual Directory Alias You must give the virtual directory a short name, or alias, for quick reference.
Type the alias you want to use to gain access to this Web virtual directory. Use the same naming conventions that you would for naming a directory.
Alias: Chapter21Test
< Back Next > Cancel

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



Virtual Directory Creation Wizard	×
Web Site Content Directory Where is the content you want to publish on the Web site?	
Enter the path to the directory that contains the content.	
Directory:	
C:\Chapter21Examples	Browse
< Back Next >	Cancel

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



Virtual Directory Creation Wizard	×
Access Permissions What access permissions do you want to set for this virtual directory?	5
Allow the following:	
✓ Read	
Run scripts (such as ASP)	
Execute (such as ISAPI applications or CGI)	
☐ Write	
E Browse	
Click Next to complete the wizard.	
< Back Next >	Cancel

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



🐚 Internet Information Servic	es (IIS) Manager			
🐚 Eile <u>A</u> ction <u>V</u> iew <u>W</u> indov	v <u>H</u> elp			_ Ð ×
← → 🔳 🗟 😫 💂				
Internet Information Services	Computer	Local Yes	Version IIS V6.0	Status
Application Pools		res	115 98.0	
🖃 🔮 Default Web Site				
⊕				
🗄 🏷 Default SMTP Virtual Se				
	[•]			•

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





Fig. 21.9 Virtual Directory Creation Wizard welcome dialog.



Virtual Directory Creation Wizard
Virtual Directory Alias Specify a short name, or alias, for this virtual directory.
Type the alias you want to use to gain access to this Web virtual directory. Use the same naming conventions that you would for naming a directory.
Alias: Chapter21Test
< <u>B</u> ack <u>N</u> ext > Cancel

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



Virtual Directory Creation Wizard	×
Web Site Content Directory Where is the content you want to publish on the Web site?	
Enter the path to the directory that contains the content for this Web sit	e.
Path: C:\Chapter21Examples	Browse
	DIOMS6
< <u>B</u> ack <u>N</u> ext >	Cancel

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



Virtual Directory Creation Wizard	×
Virtual Directory Access Permissions Set the access permissions for this virtual directory.	
Allow the following permissions:	
☑ Read ☑ Run scripts (such as ASP)	
Execute (such as ISAPI applications or CGI)	
E Browse	
To complete the wizard, click Next .	
< <u>B</u> ack <u>N</u> ext>	Cancel

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.)

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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

Internet and WWW How to Program - Welcome - Microsoft Internet Explorer	
File Edit View Favorites Tools Help	
Address 🕢 http://localhost/Webpub/Chapter21Test/test.html	∂Go
Congratulations! Your Web server is up and running.	
Done	

Fig. 21.14 Requesting test.html from IIS 5.

Internet and WWW How to Program - Welcome - Micros	<u>- 🗆 ×</u>
<u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp	
Address 🕢 http://localhost/Chapter21Test/test.html	∂Go
Congratulations! Your Web server is up and running.	4 A
🗉 Done 📃 🙀 Local intranet	

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

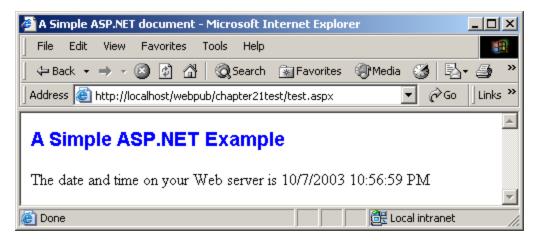


Fig. 21.16 Requesting test.aspx from IIS 5.



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

Test Script - Microsoft Internet Explorer	
File Edit View Favorites Tools Help	
Address 😰 http://localhost/Webpub/Chapter21Test/test.pl] @Go
	A
This is a Perl document!	
	Ψ.
🖉 Done 🛛 🖉 Local intranet	1

Fig. 21.18 Requesting test.pl from IIS 5.

Test Script - Microsoft Internet Explorer	
File Edit View Favorites Tools Help	
Address 🙋 http://localhost/Chapter21Test/test.pl	€r≩Go
	<u> </u>
This is a Perl document!	
	~
🖉 Done 🛛 🙀 🖉 Local intranet	

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

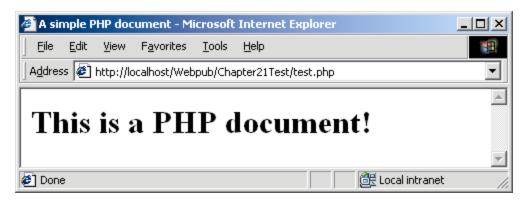


Fig. 21.21 Requesting test.php from IIS 5.

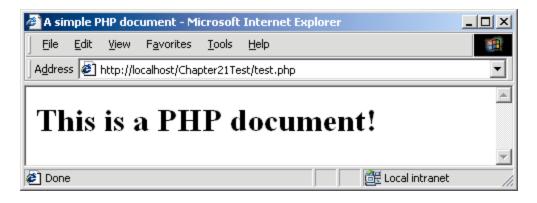


Fig. 21.22 Requesting test.php from IIS 6.



21.8.4 PHP

🚰 A simple PHP document - Microsoft Internet Explorer	
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp	
Address 🕖 http://localhost/test.php	•
This is a PHP document!	▲ ▼
🔊 Done 🛛 🖉 Local intranel	t //,

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

🖉 Test So	ript - Mi	crosoft Inte	ernet Ex	plorer				
File Edit	View	Favorites	Tools	Help				
Address 🤞	🖹 http://	localhost/Web	pub/Ch	apter211	[est/tesl	т.ру	•	∂G0
								<u></u>
Thi	s is	a Py	tha	on d	loc	um	ent	t !

Fig. 21.24 Requesting test.py from IIS.

🚰 Test Script - Microsoft Internet Explorer	
File Edit View Favorites Tools Help	
Address 🙋 http://localhost/Chapter21Test/test.py	ୖ୶୕ଡ଼
This is a Python documen	t!
Done 🕂 Eccal intranet	-

Fig. 21.25 Requesting test.py from IIS 6.



21.8.5 Python

🎒 Test Sc	ript - Mi	crosoft Inte	ernet Ex	kplore	r			_	
File Edit	View	Favorites	Tools	Help					
Address 🤕] http://l	localhost/cgi-	bin/test.	РУ				• 6	≷Go
									A
Thi	s is	a Py	tha	on (do	ocui	mer	nt!	

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

