

Windows 2000/Server 2003 MEGA LAB SERIES www.trainsignal.com



Building a Web Server for Ben & Brady's Ice Cream, Corp.

Mega Lab 3

Part 3 of 3 in the Building a Windows 2000/Server 2003 Server Series Web Server Mega Lab 33







Web Server Mega Lab 33







Building a Web Server for Ben & Brady's Ice Cream, Corp.

Mega Lab 3

Part 3 of 3 in the Building a Windows 2000 Server Series





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Introduction

Welcome to Train Signal!

This series of labs on Windows 2000 is designed to give you detailed, hands-on experience working with Windows 2000. Train Signal's Audio-Visual Lab courses are targeted towards the serious learner, those who want to know more than just the answers to the test questions. We have gone to great lengths to make this series appealing to both those who are seeking Microsoft certification and to those who want an excellent overall knowledge of Windows 2000.

Each of our courses puts you in the driver's seat, working for different fictitious companies, deploying complex configurations and then modifying them as your company grows. They are not designed to be a "cookbook lab," where you follow the steps of the "recipe" until you have completed the lab and have learned nothing. Instead, we recommend that you perform each step and then analyze the results of your actions in detail.

To complete these labs yourself, you will need three computers equipped as described in the Lab Setup section. You also need to have a foundation in Windows 2000 and TCP/IP concepts. You should be comfortable with installing Windows 2000 Professional or Server and getting the basic operating system up and running. Each of the labs in this series will start from a default installation of Windows 2000 and will then run you through the basic configurations and settings that you must use for the labs to be successful. It is very important that you follow these guidelines **exactly**, in order to get the best results from this course.

The course also includes a CD-ROM that features an audio-visual walk-through of all of the labs in the course. In the walk-through, you will be shown all of the details from start to finish on each step, for every lab in the course. During the instruction, you will also benefit from live training that discusses the current topic in great detail, making you aware of many of the associated fine points.

Thank you for choosing Train Signal!



Lab Setup



Setting up the Lab

1. Computer Equipment Needed

Item	Minimum	Recommended
Computers	(3) Pentium I 133 MHz	(3) Pentium II 300MHz or greater
Memory	128 MB	256 MB
Hard Drive	2 GB	4 GB or larger
NIC	1/machine & 1 computer (SRV-1) should have 2 NICs	1/machine & 1 computer should have 2 NICs
Hubs	1	1
Network Cable	(4) Category 5 cables	(4) Category 5 cables

I strongly urge you to acquire all of the recommended equipment in the list above. It can all be easily purchased from Ebay for around \$500 (less if you already have some of the equipment). This same equipment is used over and over again in all of Train Signal's labs and will also work great in all other sorts of network configurations that you may want to set up in the future. It will be an excellent investment in your education. You may also want to look into a disk imaging product such as Norton Ghost. Disk imaging software will save you a tremendous amount of time when it comes to reinstalling Windows 2000 for future labs. Many vendors offer trial versions or personal versions of their products that are very inexpensive.



2. Computer Configuration Overview

Computer Number	1	2	3
Computer Name	SRV-1	SRV-11	Client-1
IP Address	192.168.1.201/24 & 10.1.1.101/8	192.168.1.211/24	10.1.1.1/8
OS	W2K Server	W2K Server	W2K Pro
Additional Configurations	SP2 DNS Router (needs 2 NICs)	SP2	SP2

Note

Windows 2000 (Pro or Server) should be installed on each of these systems with only the **default settings**. If you modify settings or add unnecessary Windows components, parts of this lab might not work correctly!

3. Detailed Lab Configuration

Important Note

This lab should NOT be performed on a live production network. You should only use computer equipment that is not part of a business network AND that is not connected to a business network. Train Signal Inc., is not responsible for any damages. Refer to the full disclaimer and limitation of liability which appears at the beginning of this document and on our web site, www.trainsignal.com.



Computer 1

Computer 1 will be named SRV-1 and the operating system on this computer will be Windows 2000 Server or Advanced Server. You should also install Service Pack 2 to avoid any unforeseen problems. If you do not have a copy of Windows 2000 Server you can obtain an evaluation copy of Windows 2000 Advanced Server within the Microsoft Press series of books and Service Pack 2 is available for download on Microsoft's web site.

SRV-1 will be acting as the ISP's DNS Server and will not be a member of any domain. You should leave SRV-1 in it's default workgroup (named workgroup). It will have a static IP address of 192.168.1.201* with a 255.255.255.0 subnet mask on one NIC and static IP address of 10.1.1.101* with a 255.0.0.0 subnet mask on the second NIC. You can leave the default gateway field blank for both NICs and the preferred DNS server setting should be set to point to SRV-1's own IP address (192.168.1.201) for both NICs. The alternate DNS Server fields can be left blank. This system will also need to route information between the other two computers in the lab, so routing must be enabled.**

To enable routing go to:

Start \rightarrow Programs \rightarrow Administrative Tools \rightarrow Routing and Remote Access.

In the left pane of the console right click on SRV-1 and select **Configure and Enable Routing and Remote Access**. On the RRAS wizard select **Network Router** as the configuration, select **TCP/IP** as the protocol and select **No** for Demand Dial connections. When the installation is finished you should have a green arrow next to SRV-1 indicating that the server has routing enabled. Routing is beyond the scope of this lab, but will be covered in another Mega Lab. See figure 1, next page.

Computer 2

Computer 2 will be named SRV-11 and Windows 2000 (either version once again) will be installed on this computer with Service Pack 2. SRV-11 will act as the web server for Ben & Brady's Ice Cream Corp. and should **not** be a member of any domain. Like SRV-1, SRV-11 should be left in the default workgroup named "workgroup." SRV-11 will have a static IP address of 192.168.1.211* with a 255.255.255.0 subnet mask. You should configure the default gateway field and the preferred DNS server setting to point to SRV-1, 192.168.1.201* and leave the alternate DNS setting blank. See figure 1, next page.

Computer 3

Computer 3 will be named Client-1 and have Windows 2000 Professional installed as the operating system. Client-1 will not be a member of any domain and will be part of the default workgroup named "workgroup." Client-1 will be acting as a public Internet user to test access to the web sites. It should be configured with a static IP address of 10.1.1.1* with a 255.0.0.0 subnet mask. You should configure the default gateway field and the preferred



DNS server setting to point to SRV-1, 10.1.1.101. You can leave the alternate DNS setting blank. See figure 1, next page.

* It's not recommended that you use public IP addresses on your network if you have computers that can connect to the Internet. In order to be safe, we are using private class IP addresses for the web server in this lab. In the real world, public IP addresses would have to be used in some capacity on all three of these machines.

** Routing is enabled on SRV-1 in this lab, to allow it to pass traffic between two different networks. Routing is not required or necessary for DNS to function or to host your web site.

You should test the network connections (using the PING command) between each of these machines to ensure that your network is set up properly. Testing before you get started will save you major time and effort later.



Important Note

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Lab 1

Creating a Web Server for Ben & Brady's Ice Cream, Corp.

You will learn how to:

- Install IIS 5.0 on Windows 2000
 - Create an HTML file
 - Create a new public website
- Configure DNS for the website
- Test and view the website from the client



<u>Scenario</u>

Ben & Brady's Ice Cream Co., is a manufacturer of gourmet ice cream products that are sold internationally. Their main headquarters is located in San Francisco and they also have a manufacturing facility in Charlotte, North Carolina. The San Francisco office currently has 5 servers, all running Windows 2000 Server, and 125 workstations, all running Windows 2000 Professional. They are connected to the Internet with a full T1 (1.544 Mbps), and Microsoft's ISA Server (firewall) protects the internal network. The facility in Charlotte is used to manufacture ice cream and to ship to Ben & Brady's east coast distributors. This location currently has 5 servers, all running Windows 2000 Server, and 30 workstations, also all running Windows 2000 Professional. Charlotte is connected to the Internet with a Fractional T1 (768 Kbps) and they also use ISA Server to protect their internal network. The two locations are connected together through a VPN formed between the two ISA Servers over the Internet. Currently, Ben & Brady's does not host any public servers (i.e. DNS, Web, Email) but rumors have been circulating that this will change...

Jill, the IT manager, has decided to give you the project of hosting the company web site on a Windows 2000 server locally. The company previously outsourced web hosting but they have had too many problems with the hosting company. They have decided to give their networking experts a shot at hosting the web site locally. Jill makes you the team leader of the new project because you have proven to be reliable and efficient in previous projects. The project folder that Jill gave to you contains all of the specifications that you need in order to get the project started. Reading through the document you see that initially, you are required to create an HTML file to use temporarily when you test the site. Also, the company has obtained a range of public IP addresses from their ISP and you have been given one of these to use. In addition, the public DNS domain name of benandbrady.com will continue to be used, along with the host name of www (the web site will be found at <u>www.benandbrady.com</u>). But, DNS will still be hosted by your ISP (pretend the DNS server that you install and use in this lab belongs to the ISP!)

In this lab you will create your test site, set up your web server and then host the site from the web server. You will also set up a public DNS server so that the Internet client (Client-1) can connect to the web server using the URL <u>www.benandbrady.com</u>.







Installing IIS on Windows 2000 Server

Windows 2000 comes with Internet Information Services (IIS) version 5.0 included in the operating system. IIS is automatically installed during the initial installation of Windows 2000, unless you specifically choose for it not to be installed (it is located within Windows Components). Nonetheless, the first step is to check and see if IIS is already on the server - if not, then follow steps 1-3 to get it installed.

 Log on to SRV-11 with the administrator account and go to Start→Settings→Control Panel. Double click on Add/Remove Programs. Within Add/Remove Programs click on the Add/Remove Windows Components button on the bottom left of the screen.

🖬 Add/Remove Programs	
Add Remove Programs	

2. That will bring up a screen with a list of all available Windows components for the Windows 2000 operating system. Scroll down the list until you find the Internet Information Services (IIS) component. If the box to the left of it is not marked with a checkmark then IIS is not installed. If it is checked then it is installed and you can click Cancel to close the Add/Remove Programs screen and move on to the next section of this lab. If it is not installed then simply place a check mark in the box next to the Internet Information Services (IIS) component and click Next to start the installation.

You can add or remove cor	mponents of Windows 2	000.	ł.
To add or remove a compo part of the component will b Details.	nent, click the checkbo e installed. To see wha	<. A shaded box t's included in a (means that only component, click
Components:			
🗆 🧼 Cluster Service			2.5 MB 🔺
🗹 🦈 Indexing Service			0.0 MB
Internet Information	Services (IIS)		22.0 MB
	()		5.2 MB
Management and M	tonitoring Lools		
Management and M	tonitoring i ools Services		2.6 MB 🗾
Management and M Message Queuing S Description: IIS services (V transactions, A	ronitoring 1 ools Services Veb and FTP support) a ASPs, database connec	long with suppor tions, and receiv	2.6 MR
Management and M Messane Queuing S Description: IIS services (v transactions, / Total disk space required:	ronitoring Loois Services Veb and FTP support) a ASPs, database connec 21.2 MB	long with support tions, and receiv	2 6 MR



3. During installation you will be prompted to insert the **Windows 2000 Server CD-Rom** or locate the **I386** folder in order for the installation to continue. Once the installation is complete, Click on **Finish**. Then close the **Add/Remove Programs** window and the **Control Panel**.

	Files Need	ded	×
		Some files on Windows 2000 Advanced Server CD are needed.	ОК
Insert Disk			Cancel
Please insert the Compact Disc labeled 'Windows 2000 Advanced Server CD' into your CD-ROM drive (D:) and then click OK.		Insert Windows 2000 Advanced Server CD into the drive selected below, and then click OK.	
You can also click OK if you want files to be copied from an alternate location, such as a floppy disk or a network server.		Copy files from:	Browse
			. 0

4. Make sure that the installation was successful by trying to open the Internet Services Manager from the Start menu.. Go to Start→Programs→Administrative Tools→Internet Services Manager. If you can open the console and see SRV-11 on the top of the tree in the left pane, then you have successfully installed IIS on this server.



Creating an HTML file

Before you build your web server, you need to create a file that will be used to represent your website within IIS. You will be creating a Hyper Text Markup Language (HTML) file. HTML is one of the most common and simplest authoring languages used to create websites. HTML files can be created with Microsoft's Notepad, WordPad or Word as well as many other programs that are purely designed for creating web pages.

Although IIS automatically creates folders for Internet services when it is installed, you are better off creating your own folders for your web sites. Creating your own folder structure



allows you to organize your web site files and folders any way you like. It will also make your system more secure, since hackers will look for the built in root folders first if your web server is ever penetrated.

1. Close the **Internet Services Manager** console and open **Windows Explorer**. On the C: drive, create a new folder and name the folder **Web Files**. This can be done by right clicking on an empty space within the **C: drive** and selecting **New Folder** from the shortcut menu.

		🔍 Local Disk (C:)	- O ×
		File Edit View Favorites Tools Help	1
		4= Back • ⇒ • 🔄 @ Search 💁 Folders @ History 💾 🖺 🗙 🖄 📰 •	
New •	Eolder	Address Docal Disk (C:)	• 🖓 😡
Properties	☑ Shortcut ^K	Folders ×	
	🕋 Briefcase 🍟 Bitmap Image	Comments Comments	WINNT
•	Image: Second	⊕	

 Now open the Web Files folder and create a new folder within it named Ben and Brady. You should now have a root folder named Web Files on the C: drive and a folder within it named Ben and Brady for the benandbrady.com web site. Close Windows Explorer when you are finished.





3. Next, use Notepad to create a simple HTML file that will be used to test the www.benandbrady.com website. Go to **Start→Programs→Accessories→Notepad**.

	-	Windows Update				- **	Notepad Paint Synchronize	Creates and
rver		Programs	•	Accessories	Þ		Windows Explor WordPad	er
dSe	(Documents	Þ	Startup	•			
ance	Б.	Settings	•	(Internet Explorer Outlook Express				
₽ }		Search	٠	📻 Camtasia	۲			
2000	٨	Help		👼 SnagIt 6	•]		
lows	<u>.</u>	Run						
Wine	D	Shut Down						
1	Start] 🗹 🏉 😂 🌖	¥,	Internet Information Serv.				

4. In notepad, type in **WWW.BENANDBRADY.COM**. Then from the File Menu select **Save As.**

		🌌 Untitled - Notepad		
		File Edit Fo	rmat Help	
		New	Ctrl+N	
		Open	Ctrl+O	
🌌 Untitled - Notepad		Save	Ctrl+S	
File Edit Format Help		Save As		
www.BENANDBRADY.COM	A	Page Setup Print	 Ctrl+P	
I		Exit		

5. On the Save As screen, open the **Save in drop down menu** and select the **Ben and Brady** folder that you created earlier as the location to save this file in.





6. Once you have selected the Ben and Brady folder as the location to save the file, enter the filename **main.html**. Placing .html after the file name will automatically convert the file to HTML format. Click on the **Save** button and close **Notepad**.

Save As							<u>? ×</u>
Save in:	🔁 Ben and Brad	y		•	두 🗈 💣	•	
Wistory History Desktop My Documents							
My Network P	File name: Save as type: Encoding:	main.html Text Document ANSI	s (*.txt)		•		Save Cancel

7. Next, open the **Ben and Brady** folder using Windows Explorer to make sure that the file was saved as HTML. If the file appears with an Internet Explorer icon then the file has been successfully saved as an HTML file. Close **Windows Explorer**.





Hosting Ben & Brady's site

1. Open the **Internet Services Manager**. You'll see that there are already some services running on SRV-11. All of these services are created and started by default when IIS is installed.

Thernet Information Services							
Action View ← → 🔁 🖬 😭 🚱 😫 💂 ▶ ■ 11							
Tree	Description	State	Но	IP Address	Port		
Internet Information Services	🔊 Default FTP Site	Running		* All Unassigned *	21		
	🤔 Default Web Site	Running Running Running		* All Unassigned *	80		
🗄 🛃 Default FTP Site	ille Administration Web Site			* All Unassigned *	6154		
🗄 🤞 Default Web Site	Server 20 SMTP Virtual Server			* All Unassigned *	25		
🗄 🧔 Administration Web Site	Default NNTP Virtual Server	Running		* All Unassigned *	119		
🗄 🌭 Default SMTP Virtual Server							
🗄 🥘 Default NNTP Virtual Server							

To create a new website right click on SRV-11 and select New→Web Site from the shortcut menu. This will start a wizard that walks you through the basic steps for creating a web site. The first screen on the wizard is just a welcome screen, click on Next.

N Internet	Information Services			
<u>A</u> ction _⊻	jew 📙 🗢 🔿 🔁	📧 🗙 🖆	7 🗗 🖪	🔮 🛛 📮 🛛
Tree		Name		Path
Internet I	nformation Services	Scripts	s Ip	c:\inetpub\sci c:\winnt\help'
1 🗍 🗍 🔂 🔂 🖬	Connect		nin	C:\WINNT\Sy
🗉 🍎 🗓	Disconnect		nples	c:\inetpub\iis
🖻 🌏 A	Backup/Restore Confi	guration	c	c:\program fil
	Restart IIS	garación	in s	C:\Program F
	New	•	FTP Site	
	All Tasks	۲.	Web Site	
	Refresh		SMTP Virtua NNTP Virtua	al Server

3. The next screen of the wizard will ask you to give the new web site a description. This is how the web site will appear within the Internet Services Manager tool. Type in: **Ben and Brady Ice Cream** and click **Next**.

Web Site Creation Wizard	×
Web Site Description Describe the Web site to help administrators identify it.	
Type a description of the Web site. Description: Ben and Brady Ice Crean	
k₂	
< Back Next >	Cancel



4. The next screen is used to specify the IP address and port number from which this web site should listen to web requests. If you have only one IP address configured on your system, then your web server will listen on this one IP address. If you have multiple IP addresses on your computer (either physical IPs assigned to multiple NICS or logical IPs assigned to one NIC) then you can choose which IP address you want this site to listen for requests on. Using multiple IP addresses allows IIS to host a different website on each different IP address. By default, All Unassigned will be selected. All Unassigned allows the web page to be viewed using any available IP address on the system. Change this setting and select the only IP address that is assigned to this computer: 192.168.1.211.



The next field is used to specify the TCP port number that this site will listen on. By default, the port number 80 will appear because this is the port number used for HTTP. HTTP is the protocol used on the Internet by Internet browsers trying to access web sites. Leave the default port number at 80 because changing it will make it much more difficult for anyone trying to connect to your web site. Browsers (i.e. Internet Explorer or Netscape Navigator) use port 80 by default when they attempt to connect to your site unless they specify the correct port number after the web site address. For example if you enter a port number of 81 the user trying to reach your site will have to enter: www.benandbrady.com:81 into the web browser address box to reach the web site. The next field on this screen is used to specify a host header, which by default is blank. The host header will tell the server what the name of this web site is. We will cover this concept in more depth later in this course. For now, leave the host header blank and click **Next**.



5. The next screen will ask you to specify the path to the home directory for the web content. In other words, where the HTML files for this web site are located. Click on Browse and select the Ben and Brady folder as the home directory for the web site. Under the path name there is a box Allow anonymous access to this Web site that is already checked. This is selected by default as Internet users must have permission to read these files to connect to the site. Therefore, selecting this option allows any user on the Internet to connect to the site without having to enter a user name and password. Leave the option checked and click Next.

Web Site Creation Wizard	×
Web Site Home Directory The home directory is the root of your Web content subdirectories.	
Enter the path to your home directory.	
Path:	
C:\Web Files\Ben and Brady	Browse
Allow anonymous access to this Web site	Ŋ
< Back Next >	Cancel



6. The next screen will ask you to specify the permissions that you want to set on the web site for Internet users. By default the Read and Run scripts permissions will be checked. The Read permission will allow users to navigate through the pages of the web site's home directory. The Run scripts permission allows users to execute Active Server Pages (ASP) scripts. The Execute permission allows users to execute any applications that use ISAPI or CGI. Typically, web based applications and other programs require one or both of these permissions (Run scripts or Execute). The Write permission allows users to upload files into the directory or to enter data into a file. This permission is typically not assigned to an anonymous Internet user. Finally, the Browse permission will allow users to browse the home directory of the web site as if they were using Windows Explorer. This web site is strictly for customers to read information about the company and its products. It will therefore only require the Read permission. Un-check the **Run scripts** permission and leave the Read permission as the only one selected. Click **Next**.



7. On the final screen of the wizard click **Finish** and you should now see the web site for Ben and Brady Ice Cream appear in the left pane of Internet Services Manager.





8. The next step is to disable the Default Web Site that was automatically created when you installed IIS. The default web site contains help files and general information about IIS and listens for web requests on Port 80. Stopping the web site or deleting it altogether will prevent it from conflicting with any site you may host on the web server yourself. Right click on **Default Web Site** and select **Stop**. You should then see the word Stopped in parenthesis next to the Default Web Site letting you know that the web site is no longer running.

🐫 Internet Informal	tion Services	Services
<u>A</u> ction ⊻iew <	⊨ → 🔁 💽	Action View 🗘 🗢 🔿 🔁 🖪
Tree	Na	Tree
🝓 Internet Information	n Services 🛛 🕌	1
🖻 – 💻 * srv-11		📢 Internet Information Services
🗄 😴 Default FTP	Site 🏼 🌋	* srv-11
庄 般 Default Wel	Capita 1/6	🗐 💭 Default ETP Site
🗄 🤣 Administrati	Explore	
🗄 🦽 Ben and Bra	Open	
🕀 🍝 Default SM1	Browse	🕀 🜏 Administration Web Site
🗄 🝥 Default NN1	Start	🗄 🧔 Ben and Brady Ice Cream
	Stop 🔪	🕀 🌤 Default SMTP Virtual Server
	Pause	🗄 🍥 Default NNTP Virtual Server

9. Now right click on **Ben and Brady Ice Cream** and select **Properties** from the shortcut menu. This will open the Properties page for the Ben and Brady Ice Cream web site. From here you can make changes and set many other site options.

	ben anu	brauy ice crea	n Propercies			스브
Action View	Direct Web Si	ory Security te Operators Site Identification	HTTP Headers Performance 1	Custom Error SAPI Filters Ho	rs Server ome Directory	Extensions Documents
Tree Internet Information Services	lame Des main.html IP	site identification cription: Address: Port:	Ben and Brady Ici 192.168.1.211 80	e Cream SSL Port:		Ivanced
Administration Web Site Ben and Brady Ice Crea Default SMTP Virtual Se Sopen Brows Start Stop Pause	se Conr conr conr conr Conr Conr Conr Conr	ections Unlimited Limited To: Inection Timeout: HTTP Keep-Alive	1,000 900 s Enabled	connections seconds		
New All Ta View Delet Refre E×por	e	Enable Logging - ctive log format: //3C Extended Lo	g File Format	<u> </u>	Properties	
Opens property sheet for the curre Help	erties	[ОК	Cancel	Apply	Help

0111



10. On the Properties page for the Ben and Brady Ice Cream web site, select the **Documents** tab. Here you are able to specify the name of the file that you want Internet users to see when they first arrive at your web site. By default IIS uses Default.htm as the default document that users will see, but if there is no file with that name in the site's home directory then users will get an error message. It is therefore very important that you address this issue anytime you set up a new site. You can either go to the home directory and change the name of the main.html file to **default.htm** or you can add the **main.html** file as a default document.

Ben and Brady Ice Cream Properties	? ×
Directory Security HTTP Headers Custom Er	rors Server Extensions
Web Site Operators Performance ISAPI Filters I	Home Directory Documents
C Enable Default Document	
Default.htm Default.asp	Add
	nemove
Enable Document Footer	Browse
OK Cancel	Apply Help

11. Instead of changing the name of the HTML file that you created just add the main.html file to the list of default documents. Click on the **Add** button. Enter **main.html** into the dialog box that appears and click **OK**.

Add Default Document		×
Default Document Name:		
main.html		
ОК	Cancel	



12. You should now have main.html appear in the documents list along with default.htm and default.asp. There is no reason to keep the other default documents on the list, so remove them by selecting each one and then clicking on **Remove** until **main.html** is the only document left on the list. Click **OK** and close the Internet Services Manager.

en and Bra	dy Ice Crea	m Properties			? ×
Directory	Security	HTTP Headers	Custom Errors	Server E	Extensions
Web Site	Operators able Default D main.html	Performance 19 ocument	API Filters Home	Add	Documents
Ena	able Documer	t Footer		Browse	
		OK	Cancel A	pply	Help

Configure DNS so Internet users can find your website

Now you must configure DNS to resolve any requests for www.benandbrady.com. This must be done on the public DNS server so that Internet users will be able to reach the web site. In this lab you will be making the zone and the host records point to Ben & Brady's web server, but in a production environment this will most likely be handled by an ISP.

1. Log on to **SRV-1** with the administrator account and open the DNS management console. Go to **Start→Programs→Administrative Tools→DNS.**





2. You need to create a forward lookup zone and records for benandbrady.com so that clients on the Internet will be able to resolve the DNS name to IP address. Right click on the **Forward Lookup Zone** folder under **SRV-1** and select **New Zone** from the shortcut menu. That will start the Forward Lookup Zone wizard that will walk you through the steps for creating a new zone. The first screen of the wizard is just a welcome screen, click on **Next**.

-	
🚊 DNS	
] 🧘 ⊆α	onsole <u>W</u> indow <u>H</u> elp
Action	n <u>V</u> iew 🗍 🖛 🔿 🛅 🚺
Tree	
, 2 , DNS ⊡ 1 (1) ⊕	RV-1 Forward Lookup Zones
÷(New Zone
	New Window from Here
	Refresh
	Help

3. The next screen will ask you to specify the type of zone you would like to create. You will only have two options available, one is a **Standard Primary** zone and the second is a **Standard Secondary** zone. The standard secondary zone can only be chosen if there is a standard primary zone already available because it copies the DNS database over from an already existing standard primary zone. In this case we don't have a standard primary zone created for **benandbrady.com**, so you will have to create a new standard primary zone. Select **Standard primary** and click **Next**.





4. The next screen will ask you for the name of the new zone. Enter **benandbrady.com** as the zone name and click **Next**.

New Zone Wizar Zone Name What do	rd 🗵
Type the	name of the zone (for example, "example.microsoft.com."):
Name:	benandbrady.com
	< Back Next > Cancel

5. Then you will be asked to specify the name of the zone file. You can give the zone file any name you want, but there is no reason to change the default name of benandbrady.com.dns. Click **Next** and you will be taken to the final screen of the wizard, which is just a summary of all the information that you entered in the wizard. Make sure that everything is correct and click **Finish**.

New Zone Wizard	New Zone Wizard	×
Zone File You can create a new zone file or use a file copied from another computer.	Completing the New Zone Wizard	
Do you want to create a new zone file or use an existing file that you have copied from another computer?	You have successfully completed the New Zone wizard. You specified the following settings:	
Create a new file with this file name:	Name: benandbrady.com	
benandhradu.com.dnc	Type: Primary	
	Lookup type: Forward	
O Use this existing file:	File name: benandbrady.com.dns	
	To close this wizard and create the new zone, click Finish.	
To use an existing file, you must first copy the file to the %SystemRoot%\system32\dns folder on the server running the DNS service.		
< Back Next> X Cancel	< Back Finish Cancel	



6. Next you need to create a host and an alias record in the benandbrady.com zone for the web server. Open the **benandbrady.com** forward Lookup zone. In the right pane right click on an empty space and select **New Host** from the shortcut menu.

🚊 DNS				<u>_ X</u>
∫ 🚊 ⊆onsole 🛛 <u>W</u> indow <u>H</u> elp				_ Ð ×
Action ⊻iew	📧 🗈 🗗 🖏			
Tree	Name	Туре	Data	
🚉, DNS	🗒 (same as parent folder)	Start of Auth	[1], srv-1., admin.	
📄 🗐 SRV-1	🔳 (same as parent folder)	Name Server	srv-1.	
Forward Lookup Zones				
benandbrady.com	Lindaka Cawyay Data Fila			
H Reverse Lookup Zones	Delead			
	New Host			
	New Alias			
	New Mail Exchanger			
	New Domain			
	New Delegation			
	Other New Records			

7. In the New Host form, enter **SRV-11** for the name and **192.168.1.211** for the IP address. Then click on the **Add Host** button to create the host record. You will get a dialog box informing you that the host record for srv-11.benandbrady.com has been created successfully. Click **OK** and then click **Done** to close the new host screen.

New Host	? ×
Location:	
benandbrady.com	
Name (uses parent domain name if blank):	
srv-11	
IP address:	
192 .168 .1 .211	
Create associated pointer (PTR) record	
	icel



8. You now will need to create an alias record that will point to the web server. An alias record is simply an alternative name for an already existing host record. In this case you will create an alias for SRV-11 so that users can reach the web site by entering www.benandbrady.com into their internet browsers. In the right pane, right click on an empty space and select **New Alias** from the shortcut menu.

🚊 DNS						
∫ 🚔 ⊆onsole Window Help						
$ \underline{A}$ ction View $ \underline{\leftarrow} \rightarrow \underline{\textcircled{1}}$						
Tree	Name	Тур				
🚊 DNS	🗒 (same as parent folder)	Sta				
🚊 📲 SRV-1	🗒 (same as parent folder)	Nar				
🛱 💼 Forward Lookup Zones	≣ srv-11	Hos				
benandbrady.com		_				
🗄 🔚 Reverse Lookup Zones	Update Server Data File					
	Reload					
	New Host					
	New Alias					
	New Mail Exchange					
	New Domain					
	New Delegation					
	Other New Records					

9. The New Resource Record screen will appear, asking for information to create a new alias. Enter **www** as the Alias name and **srv-11.benandbrady.com** for the fully qualified name. You can also browse for the host record of srv-11.benandbrady.com. Click **OK**.

New Resource Record	<u>? ×</u>
Alias (CNAME)	
Parent domain:	
benandbrady.com	
Alias name (uses parent domain if left blank):	
www	
Fully qualified name for target host:	
srv-11.benandbrady.com	Browse
	43
OK	Cancel



10. You should now see a host record for SRV-11 and an alias record for www appear in the right pane of the DNS console. This will resolve any DNS query made for www.benandbrady.com.

을 DNS					
] 🚊 <u>C</u> onsole <u>W</u> indow <u>H</u> elp			_ 8 ×		
Action View \Rightarrow \mathbf{E} \mathbf{R} \mathbf{P} \mathbf{E}					
Tree	Name	Туре	Data		
. DNS	🗐 (same as parent folder)	Start of Auth	[1], srv-1., admin.		
🚊 📲 SRV-1	🗐 (same as parent folder)	Name Server	srv-1.		
🚊 📄 Forward Lookup Zones	I≣srv-11	Host	192.168.1.211		
benandbrady.com	l≣ www	Alias	srv-11.benandbrady.com		
🗄 💼 Reverse Lookup Zones					

Testing the website from the client

1. Log on to **Client-1** with the administrator account (any user account would be fine) and open the **Internet Explorer** browser.

🏦 Start 🛛 🗹 🏈 🖏 🗍

2. In the Internet Explorer address box enter **www.benandbrady.com** and click **Go**. That should take you to the test web site for the Ben and Brady Ice Cream Company.

🖉 http://www.benandbrady.com/ - Microsoft	Internet Explor 💶 🗙
File Edit View Favorites Tools Help	(B)
] ← Back + → + ② ② ♂ 🖓 ③ Search (🚡 Favorites 🛛 🖓 History 💙
Address 🛃 http://www.benandbrady.com	▼ 🖓 Go 🛛 Links ≫
WWW.BENANDBRADY.COM	A



Lab 2

Creating an additional secured web site for Ben & Brady's Partners

You will learn how to:

- Create & Add an additional web site to a web server
 - Configure DNS to handle additional websites
 - Configure host headers for web sites
 - Assign site operators to manage a web site
 - Add authentication to a web site
 - Test and view secure web sites from a client


<u>Scenario</u>

Jill calls you into her office and introduces you to Bill, the new web site designer. He has been hired to create and manage a new web site that will be hosted on Ben & Brady's web server. The new site is for Ben & Brady's partners to access information regarding wholesale prices, product information as well as marketing information on upcoming new products. Bill will be in charge of creating the site and updating it on a daily basis. She tells you that the web site will need to go live by the end of the week because the CEO is meeting with all of the partners and would like to show them the new site during their meeting. Jill explains to you both that the web site must only be accessible by partners and they don't want to allow any consumers or competitors to be able to view any of the wholesale product prices . Therefore all partners must be given secure user names and passwords to be able to access the site. Jill has registered the public domain name bandb-icecream.com to use for the secure site, but she did not get a second public IP address for this site. Therefore you must use the single public IP address that is already hosting the benandbrady.com web site. Jill is aware that there are several ways to host multiple web sites using one IP address, but she has left it up to you and Bill to decide which method will work best.

In this lab you will create a new test web site in similar fashion to Lab 1. You will also configure this site to require a username and password. Local user accounts will be created for Bill and the partners to use. Bill will be configured as a web site operator, only allowing him to manage the secure web site and not the whole web server. DNS will also be configured so that the web sites can be reached from a test computer using a URL.







Creating a Test Web Site using a HTML file

 Log on to SRV-11 with the administrator account and open Windows Explorer. On the C: drive, open the Web Files folder and create a new folder within it named B and B. This can be done by right clicking on an empty space within Web Files and selecting New Folder from the shortcut menu. You should now have two folders within Web Files, one named Ben and Brady and the other named B and B. Close Windows Explorer when you are finished.

		🔁 Web Files	
		File Edit View Favorites T	ools Help
		📙 😓 Back 🔹 🤿 👻 🔂 🔯 Searc	h 强 Folders
		Address 🗋 Web Files	
New 🔸	Eolder		~
Properties	⊇ Shortcut K		
	Briefcase	Web Files	Ben and Brady
	👕 Bitmap Image		
	Rich Text Document	File Folder	
•	Text Document	Modified: 9/20/2002 2:16 PM	B and B
	Wave Sound	1	h?

2. Next, use Notepad to create a simple HTML file that will be used for the www.bandbicecream.com website. Go to Start→Programs→Accessories→Notepad.

	*	Windows Update	1			/ ** ©	Notepad Paint Synchronize	Creates and
ver	F	Programs •	G	Accessories	١	2	WordPad	
ISer	\bigcirc	Documents •		Administrative Tools Startup	+			
Dee		Settings •	6	Internet Explorer				
Adva		Search •	ē	Camtasia	Þ			
2000		Help		SnagIt 6	•	J		
SWO	2.	Run						
Wind	I	Shut Down						
1	Start	🖸 🏉 🗊 🛛 🌂	Inte	rnet Information Serv.				

3. In Notepad, type in **www.bandb-icecream.com** and then select **File→Save As** from the menu.





4. On the Save As screen open the Save in drop down menu and select the B and B folder that you created earlier as the location to save this file. Once you have selected the folder, enter the filename main.html. Then click on the Save button and close Notepad.

Save As			<u>?</u> ×
Save in:	🔄 B and B	- 🖛 🗈 💣	
History Desktop My Documents SRV-11 Wy Network P			Save Cancel
			//

5. Now open the **B** and **B** folder using **Windows Explorer** to make sure that the file was saved using HTML. Close **Windows Explorer**.





Creating an additional Website on the Web Server

1. Open the Internet Services Manager and right click on SRV-11. Then select New→Web Site from the shortcut menu to start the new web site wizard to create a new website for www.bandb-icecream.com.

V alue Internet	Information Services			
<u>Action</u>	/jew 📙 🗢 🔿 🔁	💽 🗡 f	P 🗗 🖪	😫 💂
Tree		Name		Path
Internet I	Information Services	Script	s Ip	c:\inetpub\scr c:\winnt\help\
	Connect Disconnect		min nples	C:\WINNT\S; c:\inetpub\iis
E	Backup/Restore Confi Restart IIS	guration	C Nin S	c:\program file C:\Program Fi
	New	۲	FTP Site	
	All Tasks	•	Web Site	
	Refresh		SMTP Virtu	al Server
	Properties		NNTP Virtu	ial Server

- Within the wizard click Next on the welcome screen. On the next screen type in: B and B Ice Cream as the description for the web site and click Next to continue.
- 3. The next screen will first ask you to specify the IP address to use for the web site. Select **192.168.1.211** from the drop down menu for this, as it's the only one available. Leave the default port number 80. Leave the host header blank and click **Next**.
- 4. Specify the path to the home directory for the web content as the **B** and **B** folder and leave the Allow anonymous access to this Web site box checked, then click **Next**.
- 5. This web site will be used strictly for B & B's partners to read information about the company and its products. Un-check the **Run scripts** permission, leaving the Read permission as the only one selected. Click **Next**.
- 6. On the final screen of the wizard click **Finish** and you should now see the web site for B and B Ice Cream appear in the left pane of Internet Services Manager.



7. Next, open the Properties page for the B and B Ice Cream web site. Right click on B and B Ice Cream, select Properties from the shortcut menu, and then select the Documents tab. Click on the Add button and enter main.html into the dialog box that appears and click OK. Next, remove the default.htm and default.asp documents from the list. Click OK to close the properties for the B and B Ice Cream web site. Remember, this step is done to specify which page from the web site should be loaded first whenever a user visits the site (main.html is the name of the file created earlier in this lab).



8. Notice that, in the left pane of the Internet Services Manager, the B and B Ice Cream web site shows as being stopped. Right click on the **web site** and select **Start** to try and get it going.



9. You will get an error message telling you that a duplicate name exists on the network. Click **OK**.

Internet Services Manager 🛛 🗙					
⚠	A duplicate name exists on the network.				
	ОК				



Creating host headers to differentiate between the two web sites

The reason that you are getting the error message is that you did not specify how the web server will differentiate between the two web sites. Therefore, it will not allow you to create a second website until you do so. There are a few ways to set up different web sites on the same web server. One way is by using different IP addresses for each web site - in this instance you will need to have more than one NIC or multiple IP addresses assigned to one NIC. Although this may be the easiest way to separate the two web sites, the company only has one public IP address at its disposal with no plans of getting another, so even if you add a second NIC you will still need another public IP address in order for this to work. The second way is by giving the web sites different port numbers - this can cause problems as the default port number for Internet browsers is 80. Changing the port number would mean that users trying to connect to the website would have to specify the port number after the address to get there. For example, if you change the port number for www.bandbicecream.com to 81, then users will only be able to access the web site from Internet Explorer by entering **www.bandb-icecream.com:81** as the address. That would work fine in principle, but users aren't generally aware of port numbers and it would be difficult to have to remember port numbers if every website on the Internet required different port numbers. The third option is to give each web site a unique host header name. Assigning a unique host header name to each web site will allow the web server to read the name in the host header (provided by the URL that Internet users type in) and point them to the correct web site. In this case, Ben & Brady's best option is to use host headers in order for the web server to know which web site is being requested.

1. Open the **Properties** page of the Ben and Brady Ice Cream web site. On the Web Site tab click on the **Advanced** button that is located on the right of the IP address under the Web Site Identification section.

Ben and Brady Ice Cream Properties						
Directory Security	HTTP Headers Custom Errors Server Extensions					
Web Site Operators	Performance ISAPI Filters Home Directory Documents					
Web Site Identification	·					
Description:	Ben and Brady Ice Cream					
IP Address:	192.168.1.211 Advanced					
TCP Port:	80 SSL Port: 73					
Connections						



2. This will open a screen for Advanced Multiple Web Site Configuration. This is where you add or change settings for the identification of a web site. The only identity that will appear right now is the one you created in the new web site wizard. Select the only identity that appears and click **Edit**.

Add Remove Edit	IS2.168.1.211 80 Add Remove Edit e SSL identities for this Web Site address SSL Port Add Remove Edit	P Address	TC	P Port	Host He	ader N	Name	
Add Remove Edit Itiple SSL identities for this Web Site P Address SSL Port	Add Remove Edit e SSL identities for this Web Site address SSL Port	192.168.1.21	1 80					
Add Remove Edit	Add Remove Edit e SSL identities for this Web Site address SSL Port							
Add Remove Edit	Add Remove Edit							
Add Remove Edit	Add Remove Edit							
Itiple SSL identities for this Web Site PAddress SSL Port Add Removes Edit	e SSL identities for this Web Site vddress SSL Port Add Remove Edit		Add	F	lemove		Edit	
P Address SSL Port	Add Remove Edit					_		
P Address SSL Port	Add Remove Edit	ltiple SSL identiti	es for this Wi	eb Site-				
Add Remove Edit	Add Remove Edit							
Add Remove Fdt	Add Remove Edit	P Address					SSL Port	
Add Remove Fdt	Add Remove Edit	P Address					SSL Port	
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Add Romouro Edit	Add Remove Edit	P Address					SSL Port	
	r adam	P Address					SSL Port	
		P Address	Add	1 =	lemove	1	SSL Port	

3. This opens up another screen where you can change the settings of the identity that you selected. You don't want to change the IP address or port number but you do want to add a host header name for the web server to identify it with.

Type **www.benandbrady.com** into the space next to Host Header Name and click **OK**. This will take you back to the Advanced Multiple Web Site Configuration, where you should now see the host header name www.benandbrady.com with the only identity. Click **OK** to close and save any changes you made to the web site identification.

A	dvanced Web Site Id	lentification	×	_				
	Identification IP Address: TCP Port: Host Header Name:	192.168.1.211 80 www.benandbrady.com		Ad	vanced Multiple Web 5 Multiple identities for this W IP Address 9 192.168.1.211	i te Configu eb Site TCP Port 80	Host Header Name www.benandbrady.com	×
	ОК	Cancel Help			I.	i	Remove Edit	



4. Next, change the Web Site identity for the B and B Ice Cream web site by adding the host header name of **www.bandb-icecream.com**. (Follow the same steps as changing the host header name for the Ben and Brady Ice Cream web site).

dvanced Multiple Web	Site Configu	ration	
- Multiple identities for this '	Web Site		
IP Address	TCP Port	Host Header Name	
192.168.1.211	80	www.bandb-icecream.com	
,			
A	.dd	temove Edit	

5. After adding host header names to both web sites, try to start the B and B Ice Cream web site again. You should be able to start it with no problem this time.





Configuring DNS for the second website

The next step in getting the web site up is to create a DNS forward lookup zone so that Internet users will be able to resolve the DNS name of www.bandb-icecream.com to an IP address and connect to it. Remember that in a real life situation it is typically best to have DNS configured on your ISP's public DNS server and this is what we are simulating in this lab as well.

1. Log on to **SRV-1** with the administrator account and open the **DNS** management console. Go to **Start→Programs→Administrative Tools→DNS**.



2. This time you need to create a forward lookup zone and resource records for bandbicecream.com so the clients on the Internet will be able to resolve the DNS name to the IP address. Right click on the Forward Lookup Zone folder under SRV-1 and select New Zone from the shortcut menu. This will start the Forward Lookup Zone wizard. From the wizard select a new Standard primary zone, enter bandb-icecream.com as the new zone name, and leave the default name of bandb-icecream.com.dns for the DNS zone file. After clicking finish, you should now have two Forward Lookup Zones, one for each web site.

A DNS	🚊 DNS
] 🚉 ⊆onsole <u>W</u> indow <u>H</u> elp] 🚉 ⊆onsole Window Help
ActionYiew ← → 🖭 🖪	$] \underline{Action} \underline{V}_{iew}] \Leftarrow \rightarrow \boxed{\textcircled{1}} \boxed{\textcircled{1}} \boxed{\textcircled{2}} \boxed{1} 1$
Tree	Tree Name
PINS .	DNS (same as parer
	SRV-1
Forward Lookup Zones	Forward Lookup Zones
🖶 📲 New Zone	
New Window from Here	
Refresh	
Help	



3. The next step is to create a host and an alias record in the bandb-icecream.com zone for the web server. Open the bandb-icecream.com Forward Lookup Zone and create a New Host record for SRV-11 by right clicking on bandb-icecream.com and selecting New Host. Next specify SRV-11 as the name and enter 192.168.1.211 as the IP address. Follow this up by creating a New Alias record with www as the alias name pointing to SRV-11.

You should now have a host record for SRV-11 and an alias record for www appear in the right pane of the DNS console for the bandb-icecream.com zone. Close the **DNS** management console.

🚊 DNS			<u> </u>
Console <u>W</u> indow <u>H</u> elp			_8×
$ \underline{A}$ ction \underline{V} iew $ \Leftarrow \Rightarrow \underline{\bullet} $	I 🗙 🖻 🗗 🗟 😫		
Tree	Name	Туре	Data
	🗒 (same as parent folder)	Start of Auth	[1], srv-1., admin.
□ ■ SRV-1	(same as parent folder)	Name Server	srv-1.
📄 🚊 Forward Lookup Zones 🚽	Srv-11	Host	192.168.1.211
🔤 benandbrady.com 🤇	l≡ www	Alias	srv-11.bandb-icecream.com
bandb-icecream.com			
🗄 🛄 Reverse Lookup Zones			

Test and view website from client

1. Log on to **Client-1** as any user and open the **Internet Explorer** browser.



2. In the Internet Explorer address box enter **www.bandb-icecream.com** and click **Go**. You should be taken to the B and B Ice Cream web site that you created. Now open another Internet Explorer window, enter **www.benandbrady.com** into the address box and click **Go**. This should take you to the Ben and Brady Ice Cream web site that you created.

http://www.benandbrady.com/ - Microsoft Internet Explorer	💶 🗖 🗶 🛃 http://www.bandb-icecream.com/ - Microsoft Internet Explorer	
File Edit View Favorites Tools Help	File Edit View Favorites Tools Help	
← Back → → · ③ //// ② Search 🚡 Favorites ③ History	ory 🔂 🚽 🎒 🗍 🖙 Back 🔹 🔿 🗸 🚳 📝 🎢 Search 👔 Favorites 🎯 History 🔂 🗸	4
Address 🖉 http://www.benandbrady.com/	Go J Links » Address Ø http://www.bandb-icecream.com/	nks »
WWW.BENANDBRADY.COM	www.bandb-icecream.com	



Assigning site operators

Site operators are allowed to change some but not all of the settings on the web site they are assigned to. You can make someone a site operator if you want them to manage a particular web site on a web server but **not** the web server itself. Site Operators are allowed to change the access permission, logging, default documents, HTTP headers, content ratings, footers and page content expiration. They are not allowed to change the IP address, TCP Port number, host header, bandwidth throttle, anonymous user account and password or create and modify any of the site's virtual directories. Since this web server is not part of a domain you will create a local user account for Bill, the web site developer. You will also need to create user accounts for each different partner company that you want to allow to connect to the partner web site.

 Log on to SRV-11 with the administrator account and open the Computer Management console. Go to Start→Programs→Administrative Tools→Computer Management. Under system tools, open Local Users and Groups.

📮 Computer Management		
$ \underline{A}$ ction <u>Vi</u> ew $ \Leftrightarrow \Rightarrow \textcircled{E} \blacksquare $	5	
Tree	Name	
Computer Management (Local)	Users	
🖻 🐝 System Tools	Groups	
Event Viewer		
🗄 🖼 System Information		
🗄 🐺 Performance Logs and Alerts		
🗄 📄 🔂 Shared Folders		
Device Manager		
🗈 🔣 Local Users and Groups		
📮 🚰 Storage		
Disk Management		
🛛 😽 Disk Defragmenter		
庄 🈭 Removable Storage		
🗄 🎲 Services and Applications		

2. Right click on the Users folder and select New User from the shortcut menu.





3. You will need to create users for Bill, the website designer, and a user account for each of the partners. For Bill, create an account with the User name: Bill, Full Name: Bill W. Site with a description of Web Site Creator and the password: test. For the partners, create an account with the username: partner, full name: Partners and a description of Allow Web Site Access. Set the password as: vanilla. Close the New User screen when you're done.

New User		<u>?</u> ×	New User		? X
User name:	Bill		User name:	partner	
Full name:	Bill W. Site		Full name:	Partners	
Description:	Web Site Creator		Description:	Allow Web Site Access	
Password:			Password:	******	
Confirm password	t:		Confirm password	±	
User must ch	ange password at next logon		🔲 User must ch	ange password at next logon	
🔲 User cannot d	change password		🔲 User cannot (change password	
Password nev	ver expires		Password nev	ver expires	
🔲 Account is dis	sabled		🔲 Account is dis	sabled	
	Create	æ		Create 📐 CI	ose

4. Now check to make sure that both users appear in the local Users container. Close the **Computer Management** console when you are done.





5. Open **Internet Services Manager** and open the **Properties** of the B and B Ice Cream web site. On the Properties page, select the **Operators** tab, then, on the operators tab, click on the **Add** button to add a new operator. A list of available Users and Groups will appear. Find and select the user **bill** and then click **OK**.

8 and 8 Ice Cream Properties	? × Select Users or Groups	<u>? x</u>
Directory Security HTTP Headers Custom Errors Server Exten Web Site Operators Performance ISAPI Filters Home Directory Doci	ents	×
Web Site Operators	Name In F	older 🔺
Girant operator privileges on this Web Site only to these Windows User Accounts. Operators: Add	SERVICE SYSTEM TERMINAL SERVER USER	
Remove	S I Date Service Servi	411 411 411
	Add Check Names	
	SEV-11928	
		OK a Carol
UK Cancel Apply H	P	

6. You should now see the user account srv-11/bill within the list of Operators. This only allows Bill to work on the B and B Ice Cream partner site and **not** the public site. Click **OK**.

and B Ice Cream Properties	<u> ? ×</u>
Directory Security HTTP Headers Custom Enors Server Extensio Web Site Operators Performance ISAPI Filters Home Directory Docum - Web Site Operators	ns ents
Grant operator privileges on this Web Site only to these Windows User Accounts.	
Operator: Add	
OK Cancel Apply Hell	P

7. Log off **SRV-11** and log back on with the username **bill.** Open the **Internet Services Manager.** Notice that the only site available to this user is the B and B Ice Cream web site. Even though there is another web site being hosted on the web server, this user can only access the B and B Ice Cream web site.

💥 Internet Information Services		
Action ← → 🗈 🖬 🗙 🗗 🔂 🛃 😫 💂		
Tree	Name	Path
Internet Information Services	💌 main.html	
🖻 🗐 * srv-11		
B and B Ice Cream		



8. Open the **Properties** of the B and B Ice Cream web site. On the web site tab notice that IP address, TCP Port and the Advanced button are all grayed out – as a web site operator this user cannot modify any of these settings.

B	and B Ice Cream	Properties		<u>?</u> ×
	Documents Web Site	Directory Security Performance	HTTP Header	s Custom Errors Home Directory
	Web Site Identif	ication		
	Description:	B and B Ice Crea	m	
	IP Address:	192.168.1.211		✓ Advanced
	TCP Port	80	SSL Port:	- フロ
	Connections			
	 Unlimited 			
	C Limited To:	1,000	connections	
	Connection Tin	neout: 900	seconds	
	🔽 HTTP Kee	p-Alives Enabled		
	Active log fo	ging mat: ded Log File Format	▼ Pr	operties
l				
		OK	Cancel	Apply Help

Adding security to a website

1. Select the **Directory Security** tab. On this tab you have three different choices for applying security to a web site. The first method is to select the way users will be authenticated to the site. The second is to grant or deny access to the site by using IP addresses. This method would be difficult to manage because there are so many different IP addresses on the internet making it tough to keep track of who to grant or deny access to. The third method allows you install a server certificate that will encrypt data going across the Internet. This involves Secure Socket Layer encryption and is commonly used for credit card transactions on the Internet.

and B Ice Crean	n Properties	?
Web Site	Performance I ISAPI	Filters Home Directory
Documents	Directory Security HT	TP Headers Custom Errors
Anonymous ad	ccess and authentication control — inable anonymous access and edit i uthentication methods for this resou	the Irce. Edit
IP address and	d domain name restrictions	e using
•	~ addresses or internet domain nam	Edit
Secure comm	unications	
F e	Require secure communications and mable client certificates when this esource is accessed.	Server Certificate
		View Certificate
		Edit
	OK Cancel	I Apply Help



2. You want to set security so that only partners who are given permission can access the web site. Click on the **Edit** button under the Anonymous access and authentication control section. By default Internet browsers are allowed to access a web site anonymously, so the web server is set to allow anonymous access. Un-checking the Anonymous access box will prevent anonymous users from being able to access your web site. This is exactly what we are trying to accomplish for our partner site.

Integrated Windows authentication requires the user to have a valid username and password to gain access to the site. Disabling Integrated Windows Authentication as well (all boxes are unchecked), will prevent any access to the web site. You can also select the box next to Basic authentication. Basic authentication will allow users that use a browser other than Internet Explorer (i.e. Netscape Navigator) to connect to your site as well, at the expense of unencrypted usernames and passwords being passed over the Internet.

How do you decide? Well, Basic authentication is the most compatible solution (Internet Explorer and Netscape Navigator will work) but also provides the lowest security. Selecting only Integrated Authentication will provide you with higher security but Netscape Navigator users will be out of luck. The best alternative is to usually select both options (or require your partners to use Internet Explorer). If you select both options, Integrated Windows authentication would be attempted first and Basic authentication would only be used if Integrated authentication was unsuccessful

If your site contained highly confidential information you would not want to use Basic Authentication at all. Check the boxes for both **Integrated Windows authentication** and **Basic Authentication** and click **OK**. Any user connecting to this site will now be required to enter a username and password.

Authentication Methods
Anonymous access
No user name/password required to access this resource.
Account used for anonymous access:
Authenticated access
For the following authentication methods, user name and password are required when - anonymous access is disabled, or - access is restricted using NTFS access control lists
Basic authentication (password is sent in clear text)
Select a default domain: E <u>d</u> it
Digest authentication for Windows domain servers
✓ Integrated Windows authentication
OK Cancel <u>H</u> elp



3. Remember that you still have NTFS security set on the root directory for the web site. This means that, if an unauthorized user gets a partner's user name and password, the worst thing they can do is read the information posted on the web site. Click **OK** to close the Authentications Method page. Then click **OK** on the B and B ice Cream web site Properties page to close it and have the new authentication method applied to the web site. Now whenever Internet users go to the B and B ice Cream web site they will have to enter a valid username and password. Log off **SRV-11**.

Test and view the website from a client

1. Log on to **Client-1** as any user and open the **Internet Explorer** browser.



2. In the Address box type in **www.bandb-icecream.com** and click on **Go**. Before you can enter the web site you will be prompted for a username and password. Click on **Cancel** until you get an error message that you are not authorized to view this web page.

http://www.bandb-icecream.com/= Microsoft Internet B File Edit View Pavorites Tools Hep ↓ Back • → ~ ② ③ ① ♪ ◎ ③Search ⓐ Pavorites ③ Address ④ http://www.bandb-icecream.com/	Aplorer × History	You are not authorized to view this page - Microsoft Internet Explo
Enter Network Password Please type your user name and password. Site: www.bandbricecream.com Realm www.bandbricecream.com User Name Password Save this password in your password list OK	2 ×	You are not authorized to view this page You do not have permission to view this directory or page using the credentials you supplied. Please try the following: • Click the <u>Refresh</u> button to try again with different credentials. • If you believe you should be able to view this directory or page, please contact the Web site administrator by using the e-mail address or phone number listed on the <u>www.bandb- icecream.com</u> home page. HTTP 401.2 - Unauthorized: Logon failed due to server configuration Intermet Information Services



3. Next, try clicking on the **Refresh** button in the toolbar and you will be prompted to enter a username and password again. This time enter the username and password for the partners account that you created earlier. The user name is **partner** and the password is **vanilla**. Click **OK**

😤 No page to display - Microsoft Internet Explorer
File Edit View Favorites Tools Help
📙 🖛 Back 🔻 🔿 🖌 🙆 🚰 🦓 Search 📾 Favorites 🔇 History 🛛 🖏 🍎
Address 🙆 http://www.bandb-icecream.com/
Enter Network Password
Please type your user name and password. Site: www.bandb-icecream.com Realm www.bandb-icecream.com User Name partner Password ******* Save this password in your password list OK Cancel
and Index.
Veh site found. Waiting for t

4. This should take you right into the main page that you created for the B and B Ice Cream web site.







Lab 3

Securing Ben & Brady's Web Server

You will learn how to:

- Download and install service packs and hot fixes
 - Set NTFS permission
 - Disable NetBIOS over TCP/IP
- Download and run the IIS lockdown tool from Microsoft
 - Enable and view Logging



<u>Scenario</u>

In your weekly meeting with Jill she brings up the issue of security on the web server. You tell her that you have set up some basic security but you haven't fully gone through and locked down the server. She wants to implement some new corporate security policies now that the company is hosting its own web server, so you both agree to do some more research and discuss any new policies in next week's meeting. In the meantime she wants you to lock down the web server as much as possible and also look for other potential problems. She gives you a few ideas of how to lock down the server including a URL on Microsoft's web site where you can download a tool to help lock down the web server.

In this lab you will learn some common and basic steps to securing a web server. You will also use a tool that can be downloaded from Microsoft to help you lock down the web server. Lastly, we will cover some security policies that will help keep the web server secure. Keep in mind that security is a very complex topic and the suggestions in this lab are just a start. To keep your network secure, you will have to be diligent in staying on top of the latest security briefings and hot fixes, especially with a web server.



Downloading and Installing Service Packs and Hot Fixes

The best way to keep your server up to date with service packs and security hot fixes is to periodically check the Microsoft website. Windows 2000 comes with a link on the Start menu named Windows Update that will take you directly to the Windows update web page. There you have the option of scanning your computer to see if there are any updates that your computer may need to download and install.

1. Log on to **SRV-11** with the administrator account and go to **Start→Windows Update** from the desktop.



2. This will open up Internet explorer and take to you to <u>windowsupdate.microsoft.com</u>, Microsoft's automated update site. From there you can have your machine scanned to see which updates your server needs. Some of the updates may not apply to you, so make sure that you investigate what each download will do to your system before installing it. You have the option of removing or adding any downloads that you want. Some downloads may need to be downloaded and installed separately from others, which requires you to reboot your machine and go back to the Windows Update site several times before you completely update your system. Although this is time consuming and it may seem like a pain, you should make sure to do this on a regular basis. Keeping up with any new service packs and security hot fixes is especially important on a web server.



Setting NTFS permissions

After installing all of the updates, your next basic step for web server security is to set NTFS permissions. You should set the permissions on the root directory where your web site files are stored. This will allow the permissions to automatically flow down and apply to all web sites files within the web site's directory. If any file or directory within your web site needs a different set of permissions you can set them individually on the specific folder or file, which will override any permissions set on the root directory.

1. Log on to **SRV-11** with the administrator account and open **Windows Explorer.** Open the **C: drive** and right click on the **Web Files** folder, which is the root directory for the web site files being hosted on this server.



2. On the properties page select the **Security** tab. Notice that there is only one group on the security list. That group is the Everyone group, which has Full Control permissions by default. Full Control permissions are inherited from the parent directory (the drive in this case) that the folder resides in, the C: drive. In order to change the permissions on this folder you must first remove the option that allows inheritable permissions. Uncheck the box at the bottom of the security tab that says **"Allow inheritable permissions from parent to propagate to this object."**

eb Files Properties	?
General [Web Sharing Sharing	Security
Name Everyone	Add Remove
Permissions:	Allow Deny
Modify Read & Execute List Folder Contents Read	
Advanced	from parent to propagate to this
OK	Cancel Apply



3. A small screen will appear asking what you would like to do with the propagating permissions. You are given 3 options, one is to Copy the permissions to this folder, the second is to Remove all permissions and assign them yourself and the third option is to simply Cancel the removal of inheritable permissions and not change anything. Click on **Copy.** This will bring you back to the Security tab where you should still have the Everyone group on the security list, only now the box at the bottom is empty and you can now change the permissions for the Everyone group. Select **Everyone** and give the group only **Read** permission to this folder then click **OK** when finished.

Web Files Properties	<u>? ×</u>
General Sharing Security	R I
Name Reveryone	Add
Permissions:	Allow Deny
Full Control Modify Read & Execute List Folder Contents Read Write	
Advanced	propagate to this
OK Can	cel Apply

4. Click on the **Add** button and select the **Administrators** group from the user and group list, then click **OK**. Next, give the Administrators group **Full Control** permissions for this folder. Then click **OK** to close the Properties page for the Web Files folder.

				Web Files Properties	? X
				General Web Sharing Sharing Security	
Select Users or Groups			<u>? ×</u>	Name	Add
Look in: 📕 SRV-11			•	Administrators (SRV-11\Administrators)	Remove
Name	In Folder			🗱 Everyone	
🖸 partner	SRV-11				
🖸 TsinternetUser	SRV-11		_		
Administrators	SRV-11				
Backup Operators	SRV-11				
Suests	SRV-11			Permissions: Al	low Deny
Berner Users	SRV-11				
E Heplicator	SHV-11			Full Control	4 🗆 🗌
Add Check Names				Modify	3 0
				Read & Execute	2 🗆 🔰
SRV-11\Administrators				List Folder Contents	2 🗆 🗌
				Read	a 🗆 🗌
				Write	ā 🗖 🗌
				Advanced	
				Allow inheritable permissions from parent to pro object	opagate to this
		OK 🔓 Cano	el	OK Cancel	Apply



5. In Windows Explorer open the **Web Files** folder and open the **Properties** page for the Ben and Brady folder that contains the files for the Ben and Brady Ice Cream web site. Click on the **Security** tab and notice that the permissions are identical to the permissions set on the Web Files folder. This is because the permissions are being inherited from the parent folder. Leave the permissions as is and click **OK** to close the Properties page.

		Ben and Brady Properties	<u>? ×</u>
		General Web Sharing Sharing Security Name Administrators (SRV-11\Administrators) & Everyone	Add Remove
Web Files Ben and Brady File Folder	Ben and Brady Explore Open Search	Permissions: Allo	w Deny
Modified: 9/25/2002 4:20 PM Attributes: (normal)	Sharing Send To Cut Copy	Full Control III Modify III Read & Execute IIII List Folder Contents IIII Read IIIII Write IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
	Create Shortcut Delete Rename Properties	Advised and the permissions from parent to propulsion from parent to p	agate to this

6. Now open the **Properties** for the B and B folder that contains the files for the B and B Ice Cream web site. Click on the **Security** tab and notice that the permissions are also the same as the Web Files folder because it is also inheriting the permissions from the parent folder.

		b and b Fropercies	<u> </u>
		General Web Sharing Sharing Security	
Web Files	Ben and Brady	Name Administrators (SRV-11\Administrators) Everyone	Add
B and B File Folder Modified: 9/21/2002 11:43 AM	Band B Explore Open	Permissions: Allow	w Deny
Attributes: (normal)	Search Sharing Send To → Cut Copy	Full Control Image: Control Modify Image: Control Read & Execute Image: Control List Folder Contents Image: Contents Read Image: Contents Write Image: Contents	
	Create Shortcut Delete Rename Properties	Advanced	agate to this



7. The next step is to assign the user account Bill permissions to this folder so that he can manage the web site for B and B Ice Cream. First click on the Add button, then find the user account named Bill (created in Lab 2) from the user and group list, then click OK. Bill should be assigned Full Control permission for this folder. By giving this user full control permissions to this sub-folder instead of the Web Files folder, you will be limiting him to Full Control only within this folder, instead of having Full Control over all of the web sites. Click OK and close Windows Explorer.

		B and B Properties	? ×
		General Web Sharing Sharing Security	
Belect Users or Groups Look in: SRV-11 Name Key Serversone	.?.× In Folder	Name Add Image: Administrators (SRV-11\Administrators) Add Image: Bill W. Site (SRV-11\Bill) Remove Image: Everyone Everyone	
Authenticated Users Authenticated Users ANDNYMOUS LOGON BATCH CREATOR GROUP CREATOR GROUP CREATOR GROUP Children Childr	-	Permissions: Allow Deny	
Add Check Names		Image: Control of the second secon	
		Advanced Advenced Advent inheritable permissions from parent to propagate to this object	
	OK Cancel	OK Cancel App	ily

Disabling NetBIOS over TCP/IP

For a Web Server on a public network it is good practice to disable NetBIOS over TCP/IP. NetBIOS is an Application Program Interface (API) that is used to allow Microsoft computers to communicate on a network. Windows 2000 computers enable NetBIOS as part of the default installation, which allows them to communicate with legacy clients such as W95/98 or NT4. It is not necessary for a Web Server (in most cases) to be running NetBIOS and disabling it will make your system more difficult to attack. NetBIOS can be disabled individually on a system or in mass, through DHCP. You also want to unbind the TCP/IP protocol from the client for Microsoft Network service in the Advanced Settings to make sure that NetBIOS is completely disabled.



1. Right click on **My Network Places** and select **Properties** to open the Network and Dial up Connections. Right click on the **Local Area Connection** and select **Properties**.



2. On the Properties page select **Internet Protocol (TCP/IP)** and then click on the **Properties** button to open the Properties page of Internet Protocol (TCP/IP). On the Properties page for Internet Protocol (TCP/IP) click on the **Advanced** button to open the Advanced Settings page for TCP/IP.

Local Area Connection Properties	Internet Protocol (TCP/IP) Properties	<u>?</u> ×
General	General	
Connect using: 3Com 3C918 Integrated Fast Ethernet Controller (3C905B-	You can get IP settings assigned automatically if your network supp this capability. Otherwise, you need to ask your network administrato the appropriate IP settings.	orts x for
Configure	C Obtain an IP address automatically	
Components checked are used by this connection:	Use the following IP address:	
🗹 📇 Client for Microsoft Networks	IP address: 192 . 168 . 1 . 211	
Retwork Load Balancing	Subnet mask: 255 . 255 . 255 . 0	
File and Printer Sharing for Microsoft Networks Internet Protocol (TCP/IP)	Default gateway: 192 . 168 . 1 . 201	
Install Uninstall Properties	C Obtain DNS server address automatically	
Description	• Use the following DNS server addresses:	
Transmission Control Protocol/Internet Protocol. The default	Preferred DNS server: 192 . 168 . 1 . 201	
wide area network protocol that provides communication across diverse interconnected networks.	Alternate DNS server:	
Show icon in taskbar when connected	Advanc	ed
OK Cancel	ОК	Cancel

3. On the Advanced TCP/IP settings screen select the **WINS** tab. On the WINS tab remove the check that is placed in the box next to Enable LMHOSTS lookup because there are no LMHOSTS being used on this server. Then select **Disable NetBIOS over TCP/IP**, and click **OK**.

dvanced TCP/IP Settings	<u> 위</u> ×
IP Settings DNS WINS Options	
WINS addresses, in order of use:	
	8
Add Edt	Remove
If LMHOSTS lookup is enabled, it applies to all or TCP/IP is enabled. Enable LMHOSTS lookup	connections for which
C Enable NetBIOS over TCP/IP	
Disable NetBIOS over TCP/IP	
 One memory served rout the DHCL, retver 	
	OK Cancel



4. After you click **OK** you will get a warning telling you that the connection has an empty primary WINS address. This warning does not concern you because NetBIOS is now disabled and the web server does not require a WINS server to function. Click on **Yes** to continue and then click **OK** until you get back to the Network and Dial-Up connections page.

Microsoft	: TCP/IP
٩	This connection has an empty primary WINS address. Do you want to continue?
	Yes No

5. From the Network and Dial-Up connections page select Advanced→Advanced Settings from the menu.

Network and Dial-up Connections		
File Edit View Favorites Tools	Advanced Help	
Gearch C	Operator-Assisted Dialing Dial-up Preferences	:::
Address P Network and Dial-up Connect	Network Identification	
	Advanced Settings	
Network and Dial-	Connection Connection	

6. From the advanced settings you can unbind different protocols and services that may be used on this computer. Un-check the boxes with **Internet Protocol (TCP/IP)**, notice that it will automatically un-check the box in the tree above it as well. In this case the only protocol that is being used is TCP/IP. Therefore, removing it from the binding list will also disable the network service that is using it. File and Printer Sharing for Microsoft Networks and Client for Microsoft Networks will now be disabled. Click **OK**.

Advanced Settings	? ×	Advanced Settings	<u>? ×</u>
Adapters and Bindings Provider Order		Adapters and Bindings Provider Order	
Connections are listed in the order in which they are accessed by DNS and other network services.		Connections are listed in the order in which they are accessed by DNS and other network services.	
Connections:		Connections:	
Local Area Connection (Remote Access connections)	¢.	Local Area Connection	Ĵ
Bindings for Local Area Connection:	Ţ.	Bindings for Local Area Connection:	Ъ,
OK	Cancel		Cancel



Download and run the IIS lockdown tool from Microsoft

Now that you have disabled NetBIOS over TCP/IP you should download and run the IIS lockdown tool from the Microsoft website to take a look at a more automated approach to locking down your Web Server. You can find the tool by doing a search on their website or the tool is currently available at this link:

http://www.microsoft.com/Downloads/Release.asp?ReleaseID=43955.

This tool is a wizard that will walk you through the basic steps of locking down your web server. You can always go through and make all the necessary security settings yourself but this wizard makes it a lot easier to ensure that you have at least all of the basics covered. The nice thing about this wizard is that it helps you secure your server by asking questions but you still have the final say on what to keep or what to get rid of.

1. Download the IIS lockdown (**iislockd**) tool to your **C: drive**. Then double click on the file to run the tool on the server.



 The first screen is a welcome screen giving you a description of the wizard you are about to run. Click Next on the next screen and you will be asked to read and agree to the End-User license agreement for Microsoft. Read the agreement and select I agree. Remember that if you don't agree to the license agreement you will not be able to continue. Click Next.





3. The next screen will ask you to select the template that matches the role of your server. In this case the template that best matches your server is the Static Web server. Select **Static Web server** and then check the box on the bottom of the screen that says **View template settings** next to it. Click **Next**.

🍕 Internet Information Services Lockdown Wizard	×
Select Server Template You can easily configure this server by selecting the t matches its role.	emplate that most closely
Select the template that most closely matches the role of t template, select the View template settings check box, an Server templates:	his server. To view the settings for this d then click Next.
Small Business Server 2000 Exchange Server 200 (DWA, PF Management, IM, SM' SharePoint Portal Server FrontPage Server Extensions SharePoint Team Services BizTalk Server 2000 Commerce Server 2000 Proxy Server Static Web server Dynamic Web server (ASP enabled) Other (Server that does not match any of the listed roles) Period that does not match any of the listed roles) Prover that does not match any of the listed roles)	P, NNTP) By not selecting this option the wizard will skip right to the end of the wizard without letting you choose any of the settings
< Back N	ext > Cancel Help

4. The next screen of the wizard will ask you to choose which Internet services you would like enabled for this server. This server will only be running the Web service so the other services must be disabled or removed. Make sure that **Web service (HTTP)** is selected from the list of Internet services. Then select the box next to **Remove unselected services**.

Internet Information Services Lockdown Wizard	×
Internet Services Services that are already selected are recommended for this server template.	?
Select the Internet services to enable on this server. Services not selected will be disabled. ✓ Web service (HTTP) This service uses HTTP to respond to Web client requests on a TCP/IP network. File Transfer service (FTP) This service supports the creation of File Transfer Protocol (FTP) sites used to transfer files to and from the Internet. E-mail service (SMTP) This service uses the Simple Mail Transfer Protocol (SMTP) to send and receive e-mail messages. News service (NNTP) This service uses the Network News Transport Protocol. Remove unselected services	
< Back Next > Cancel He	lp



5. A warning will appear telling you that selecting this option will remove the services from the server and that the only way to restore these services will be by reinstalling them through the Add/Remove Programs applet. If you select No, the services will just be disabled on the server. Selecting Yes will uninstall the services completely. For a more secure server you will be better off removing any services that are not used. It is simple to reinstall any services from the Add/Remove Programs applet if the company ever decides to use one of these services in the future. Click on **Yes** then **Next** on the wizard to continue.

Internet Information Services Lockdown Wizard
If you remove these services, you will not be able to restore them with this wizard. To restore these services, reinstall them with Add/Remove Programs and then reconfigure them.
Do you want to remove these services?
Yes No

6. The next screen of the wizard will ask you to specify which script maps you would like to disable. Script maps can be used to run malicious codes that can do harm to a web server. Because they therefore can pose a security risk you should disable any that are not being used. Both web sites that are being run are simple and do not require any script maps to be used. So select **all** of the script maps on the list and disable them. You can always go into the properties of the web site and add any script maps you may need in the future. Click **Next** to continue.

🎕 Internet Information Services Lockdown Wizard	×
Script Maps Because script maps can pose a security risk, you can disable them on this server.	R
Disable support for the selected script maps:	
Active Server Pages (.asp)	
✓ Index Server Web Interface (.idq, .htw, .ida)	
Server side includes (.shtml, .shtm, .stm)	
Internet Data Connector (.idc)	
✓ .HTR scripting (.htr)	
Internet printing (.printer)	
<back next=""> Cancel</back>	Help



7. The next screen of the wizard allows you to configure additional security on the web server. The first portion will remove any virtual directories that are not being used. In most cases it will be directories that were created by default when IIS was originally installed. These include the virtual directories for IIS Samples, IIS Help, IIS Admin, Scripts and MSADC. Select all of the virtual directories that appear on the wizard for removal. The next section allows you to set permission in order to restrict anonymous IIS users from running any system utilities or from writing to any of the directories. Select both of the file permissions that prevent the users from running applications and writing to the web server. The last option that you have the ability to disable is WebDAV. WebDAV allows for online collaboration between different people. Users can publish their files and other users (with the proper permissions) can access these files and make changes if necessary. Unless you are specifically using this feature on your web site you should disable it. The only users who should be able to make changes to the web sites hosted by Ben & Brady's Ice Cream are the local administrator on SRV-11 and the user account Bill. Select the Disable Web Distributed Authoring and Versioning option and click Next to continue.

📢 Internet Information Services Lockdown Wizard	×
Additional Security You can make additional changes to this server for added security.	R
Remove the selected virtual directories from this server (items that appear unavailable have already been removed):	
🔽 IIS Samples 🔽 Scripts	
MSADC IISAdmin	
✓ IISHelp	
Set file permissions to prevent anonymous IIS users from performing these actions:	
Running system utilities (for example, Cmd.exe, Tftp.exe)	
Vriting to content directories	
Disable Web Distributed Authoring and Versioning (WebDAV)	
< Back Next > Cancel	Help



8. The next screen of the wizard will ask if you would like to install URLScan, which filters all incoming traffic by a set of rules. The wizard will automatically set rules for you based on the configuration that you selected earlier in the wizard (Static Web Server). You can always change the rules later to fit whatever needs you may have for the web server. The default option is to install URLScan. Leave it selected and click on **Next** to continue.

🍕 Internet Information Services Lockdown Wizard	×
URLScan URLScan improves the security of this server.	?
URLScan screens all incoming requests to this server and filters them based on a set of rules. You can customize the rules based on the role of your server.	
Important: The server template that you've selected chooses a filter configuration that most close matches your server environment. For some server environments, it may enable functionality you d not require, for others it may disable functionality you read. After completing the Internet Informati Services Lockdown Werzard, Microsoft recommends you read the URLScan documentation, and tu the URLScan, ini file to meet your specific needs. In addition, remember that no tool replaces the need for timely installation of service packs and hotfixes. For more information, click Help.	ly to on une
< Back Next >>> Cancel Help	,

9. On the next screen, you will be shown all of the changes that will be made to the web server based on the information you provided in the wizard. Review the changes to make sure they're all correct and click **Next** to for the wizard to make the changes.

Internet Information Services Lockdown Wizard	Þ
Ready to Apply Settings You can now apply the security settings you selected.	R
Selected changes:	
Disable 'Server side includes (.shtml, .shtm, .stm)' script map Disable '.HTR scripting (.ht)' script map Disable 'Active Server Pages (.asp)' script map Disable 'Active Server Pages (.asp)' script map Remove the printer virtual directory Disable Web Distributed Authoring and Versioning (WebDAV) Set file permissions to prevent anonymous IIS users from writing to content directories Set file permissions to prevent anonymous IIS users from running system utilities Install URLS can filter on the server Remove 'Scripts' virtual directory	
To change your selections, click Back. To apply the new settings, click Next.	
< Back Next > Cancel	Help



10. The wizard will inform you when it is done making the changes with the message Finished in the Status window. It will also have the option of showing you a report in the form of a text document that shows all of the changes that were made. Take a look at this by clicking on the **View Report** button.

<table-of-contents> Internet Information Services Lockdown Wizard</table-of-contents>	×
Applying Security Settings Please wait while the wizard applies the security settings you selected.	R
Status: Removing printer virtual directory Removing IIS Samples virtual directory Removing Scripts virtual directory Removing IISAdmin virtual directory Removing IISAdmin web site Removing IISAdmin virtual directory Derying execute permission for system utilities to anonymous user account Derying withe permissions to web content directories to anonymous user account Restarting web service Finished View Report	
< Back Next > Cancel H	lelp

11. This will open a text document using Notepad. From here you have the ability to print the report so that you can have documentation as to what was done to the server with this wizard. Close **Notepad** and click **Next** on the wizard to continue. This will take you to the last page of the wizard, which just tells you that you have successfully completed the IIS lockdown wizard and tells you the location (%windir%/system32/inetsrv) of the report file (oblt-log) that you just viewed. Click on **Finish** to end the wizard.

🖾 oblt-rep - Notepad 📃	٦×
File Edit Format Help	
Added user 'IUSR_SRV-11' to local group 'Web Anonymous Users'. Added user 'IWAM_SRV-11' to local group 'Web Applications'. Backed up metabase Locked httpext.dll	
Locked idq.dll Disabled Internet Printing Installed URLScan	
Removed script map: .htw, C:\WINNT\System32\webhits.dll Removed script map: .ida, C:\WINNT\System32\idq.dll Removed script map: .ida, C:\WINNT\System32\idq.dll	
Removed script map: .asp, C:\WINNT\System32\inetsrv\asp.dll Removed script map: .cer, C:\WINNT\System32\inetsrv\asp.dll	
Removed script map: .cux, c:\#INNT\System32\inetsr\asp.dll Removed script map: .htr, C:\#INNT\System32\inetsr\asp.dll	
Removed script map: .idc, C:\WINNT\System32\inetsrv\httpodbc.dll Removed script map: .shtm. C:\WINNT\System32\inetsrv\ssinc.dll	
Removed script map: .shtml, C:\WINNT\System32\inetsrv\ssinc.dl Removed script map: .stm, C:\WINNT\System32\inetsrv\ssinc.dll	1
Removed script mapprince, c:(WINN(Systems2(mossprt.df) Removed printer virtual dir (/LM/W3SvC/I/Root/Printers) Removed samples (/LM/W3SvC/1/Root/IISsamples)	
Removed MSADC virtual dir (/LM/W3SVC/1/ROOT/MSADC) Removed scripts virtual dir (/LM/W3SVC/1/ROOT/Scripts) Removed IISAdmin virtual dir (/LM/W3SVC/1/ROOT/IISAdmin)	
Removed IISAdmin web site (/LM/W3SVC/2)	-



12. Next, open the **Internet Services Manager** to see if you notice any of the changes made in the wizard. The first difference you should see is that only web services appear in the left pane. The other services don't appear anymore because the wizard removed them.



Enable and view logging

Logging is enabled by default when IIS 5.0 is installed. Logging is a great way to monitor if your server is being or has been attacked.

1. On the Internet Services Manager, right click on the **B and B Ice Cream** web site and select **Properties**. On the Properties page notice that logging is enabled using the W3C Extended Log File Format. There are three different formats that you can choose from on the drop down list but the W3C format is the most used log format because it lets you log more information than the other formats and is more flexible with specifying what information to log. Leave the default W3C Extended Log File Format and then click on the **Properties** button.

B and B Ice Cream Prope	erties 1	<u> </u> ×
Directory Security Web Site Operators	HTTP Headers Custom Errors Server Extensions Performance SAPI Filters Home Directory Documer	s nts
Web Site Identification		
Description:	B and B Ice Cream	
IP Address:	192.168.1.211	11
TCP Port:	80 SSL Port:	
Connections		
Unlimited		
C Limited To:	1,000 connections	
Connection Timeout:	900 seconds	
✓ HTTPKeep-Alive:	s Enabled	
Enable Logging		
Active log format:		
W3C Extended Lo	g File Format Properties	
	OK Cancel Apply Help	



2. On the Logging Properties page, under the General Properties tab, you can specify how often a new log should be started and where the log file should be stored. By default the New Log Time Period is set to Daily and the Log file directory is %WinDir%\system32\LogFiles. Below the Log file directory location is the name of the folder the file is placed in and the naming scheme that is given to the log files. in this case the folder it's located in is W3SVC4 and the log file will be exyymmdd.log. The file name will start with ex, yy stands for the year, mm stands for the month and dd stands for the day of the log.

Extended Logging Properties	×
General Properties Extended Properties	
New Log Time Period	
O Hourly	
• Daily	
C Weekly	
O Monthly	
O Unlimited file size	
O When file size reaches:	
19 😴 MB	
Use local time for file naming and rollover	
Log file directory:	
%WinDir%\System32\LogFiles Browse	
Log file name: W3SVC4\exyymmdd.log File Name	
OK Cancel Apply Help	

3. Next, click on the Extended Properties tab. On the Extended Properties tab you can select the information that you want to log. You should have the Date and Time selected by default as well as a few other basic options. Here is a list of some basic options you should select if they are not already selected already: Client IP Address, User Name, Method, URL Stem, HTTP Status, WIN32 Status, User Agent, Server IP Address and Server Port. Click OK and close the B and B Ice Cream web site Properties page.




4. Open Windows Explorer and go to C:\WINNT\system32\logfiles\W3SVC4. You should find a log file for the B and B Ice Cream web site. The log file will have a name that matches the days you have been working with this lab. If there isn't a log file there already open Internet Explorer and go to the B and B Ice Cream web site to give it some traffic and then restart the server.

🔁 W35VC4	
File Edit View Favorites	Tools Help
📙 🖨 Back 🔹 🔿 👻 🔂 🚳 Sear	rch 强 Folders 🔇 History
Address 🗋 W35VC4	
W3SVC4	ex020906
ex020906 Text Document	

5. Open one of the log files by double clicking on it. The results in your log will be different from the results that are logged in this file but the type of information that is logged should be the same. The first thing you will see on the log is the date and time of the event, then the client IP address of the computer that was trying to access the web site, the user name that was used to try to access the site followed by the web server IP address that it was accessing. After the server IP address will be the port number that was used to try to access the web site followed by the method (the type of action the client was trying to perform). After this, you will see the protocol status for the event in HTTP terms, for example a protocol status of 401 was unauthorized to view the site. You should research and get a list of all the HTTP protocol statuses and what they stand for to properly identify the events. At the end of the event logged you will see the user agent (Internet Browser) that was used to access the web site.

🖉 ex020906 - Notepad	_ 🗆 🗵
File Edit Format Help	
#Software: Microsoft Internet Information Services 5.0 #Version: 1.0	-
#Date: 2002-09-06 18:40:36 #Fields: date time c-in cs-username s-in s-nort cs-method	
cs-uri-stem cs-uri-query sc-status cs(User-Agent)	
2002-09-06 18:40:36 / Dete and Time 2.168.1.211 80 GET / - 401	
MUZIIIa/4.0+(Cumpat)	
Mozilla/4.0+(compatible:+MSIE+5.01:+Windows+NT+5.0)	
2002-06 10-1 10.1.1.1 - 192.168.1.211	
Mozill Client IP Address Zible; +MSLE+5. UL; +WINDUWS+N Server IP Address	
2002-09-06 18:41:48 10.1.1.1 partner 192.168.1.311 80 GET	
Mozilla/4.0+(compatible:+MSTE+5.01:+Windows+NT+5.0)	
2002-09-00 - 44.00 10.1.1.1 partner 192.108.1.211 80 GET	
/main.html '94	
MOZILIA/4. OMPATIDIE;+MSIE+5.01;+WINDOWS+NT+5.0)	
/main.html	
Mozilla/4. ompatible;+MSIE+5.01;+Windows+NT+5.0)	
2002-09-06 +0-44:23 10.1.1.1 - 192.168.1.2 - 401	
MOZILIA/4.U+(COMPATIDIE;+MSIE+5.UI;+WINDOW HOUSE Status	r /
- 401 Mozilla/4. User Name	
2002-09-06 18:44:35 10.1.1.1 let me in 192 Method 3 GET	c /
- 401 Mozilla/4.0+(compatible;+MSIE+5.01;+Wmoows+wn0)	-
2002-09-06 18:44:36 10.1.1.1 - 192.168.1.211 80 GET / - 401	-