Deploying the ClientDashboard Web Site

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Introduction

The purpose of this document is to assist ship Electronic Technicians and other administrators with deploying the SCS Client Dashboard Web site on a web server until a more automated installation process may be developed. Administrative privileges are required to perform these operations.

Deploying the Web site generally involves the following steps, some of which may already be completed: installing and configuring Internet Information Services (IIS), creating and configuring the Web site in IIS, opening a firewall port, and installing, configuring, and encrypting files that comprise the program.

Installing and configuring IIS

If not already running on the machine designated to be the web server, IIS can be installed from the Control Panel. For installing IIS, please refer to **Appendix A: Installing IIS 7 on Windows Server 2008 R2 for Deploying SCS ClientDashboard** on Page 13.

Software installations

Install Microsoft .NET Framework 4 and Silverlight on the web server.

Visit Download for .NET 4 to download **dotNetFx40_Full_setup.exe**, which may be run to install .NET Framework 4.

To download the latest version of Silverlight, or to easily view the current version installed, go to the site http://www.microsoft.com/getsilverlight/Get-Started/Install/Default.aspx. If necessary, download and run **Silverlight.exe**.

Opening a firewall port

A local port will need to be assigned and permitted access though the firewall. A port may be opened by adding an inbound rule from Windows Firewall with Advanced Security.

In the Control Panel, under **Control Panel\All Control Panel Items\Windows Firewall**, select **Advanced Settings**.

Under Advanced Settings on the left, right click **Inbound Rules**, select and select **Net Rule…**

In the New Inbound Rule Wizard, under Rule Type, select **Port**. Specify **TCP** and the port number, say, 81, or 82. Under Action, select **Allow the connection**. Under Profile, ensure **Domain** and **Private are checked and** . The Name may be set to “SCS Client Dashboard.”

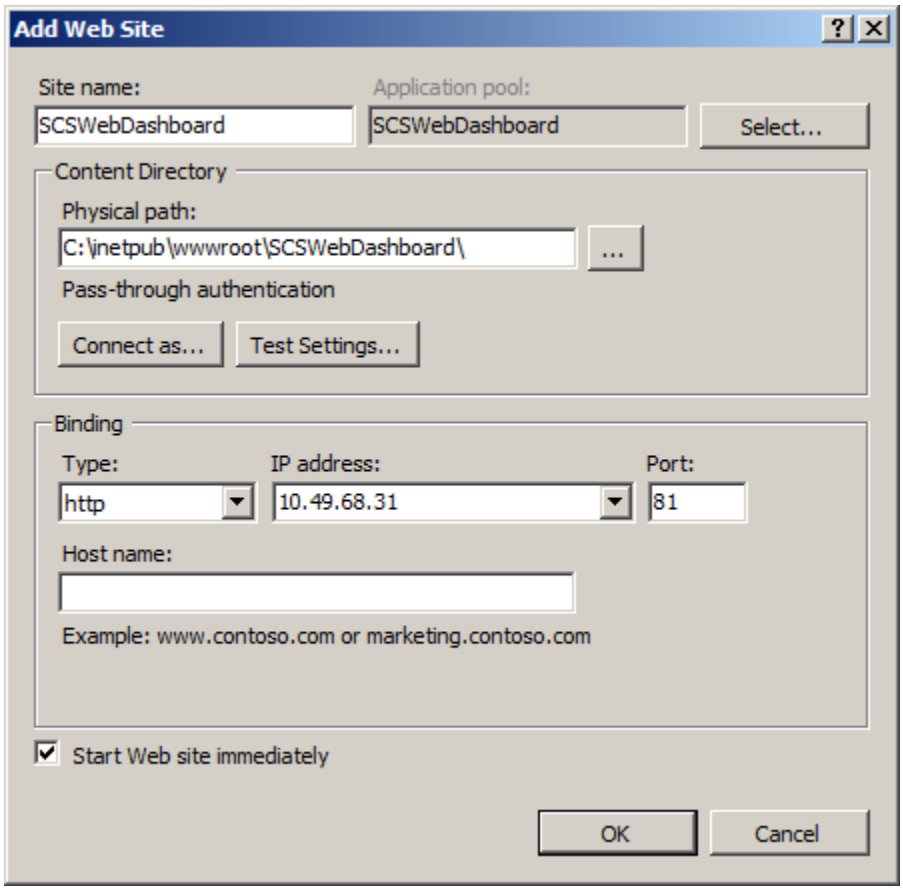
Adding the SCSWebDashboard Web site

Create a new folder within *C:\inetpub\wwwroot* called *SCSWebDashboard*. Copy the contents of the deployment package to this directory. The directory *C:\inetpub\wwwroot\SCSWebDashboard* should be

the root directory of the files (such as web.config, Default.aspx, etc.) and the folders (such as bin, ClientBin, etc.) copied from the unzipped deployment package.

To create the web site, open IIS Manager. Under the **Connections** panel on the left side of IIS, you'll see a tree view with the name of your server. Open the tree items, right click on **Sites**, and then select **Add Web Site…**

Within the **Add Web Site** window, the **Site name** should be *SCSWebDashboard*, and the **Physical path** should be *C:\inetpub\wwwroot\SCSWebDashboard*. The **Connect as…** setting should be *Application user*. **Type** should be *http*. The **IP address** should be the IP address of your server, and the **Port** should be the number chosen for the port mentioned in the previous section, **Opening a firewall port**. **Host name** may be left blank.



Sample entries for adding a Web site.

Virtual directories of the SCS system directory trees (LOG40, GIS40, SHIP40, and EXE40) may need to be added to the website if these are shares located on a server other than the web server. A virtual directory may be added by right-clicking on SCSWebDashboard, selecting the **Add Virtual Directory…** menu item, and enter the appropriate values for the SCS directories for your server.

Under the **Application Pools** tree item (under the name of your server within the **Connections** panel), the SCSWebDashboard entry may need the .NET Framework Version edited to v4.0.

Editing and encrypting passwords and IP addresses within configuration files

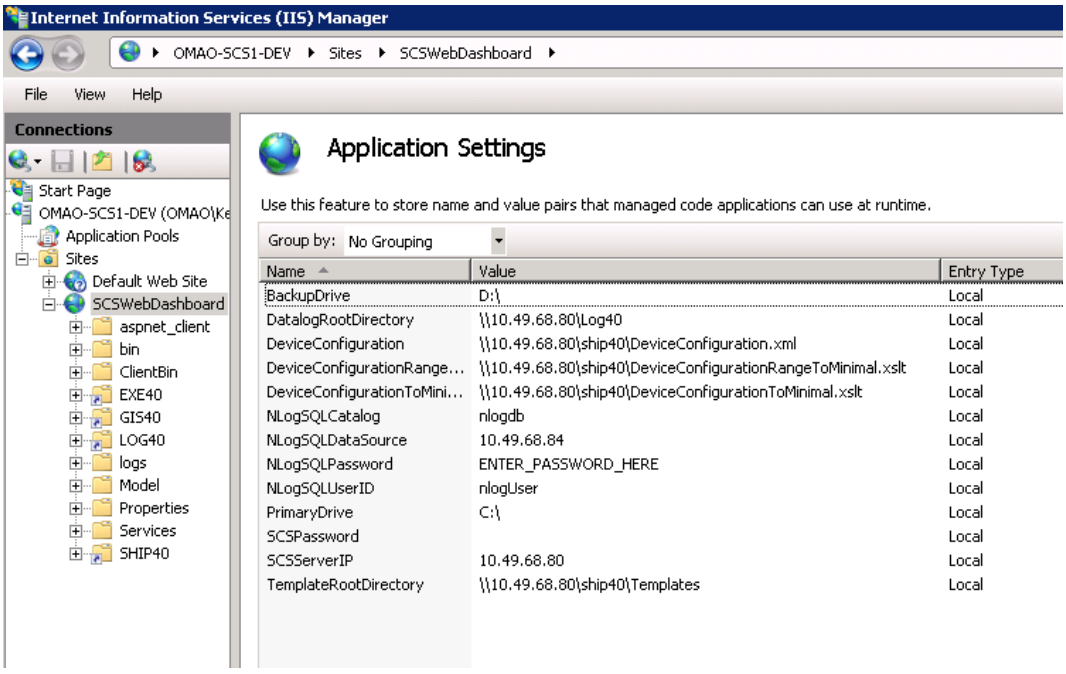
Database passwords and IP addresses are stored and encrypted within the web.config file.

Open IIS Manager and click on the SCSWebDashboard item within the **Connections** tree view. Make sure the **Features View** option is selected at the bottom of the application window. You may click on the various icons, adjust settings, and then navigate back to original view by clicking the left arrow at the top left of the screen.

Click on the icon for **Application Settings**. The following entries will need to be customized for each ship:

BackupDrive
DatalogRootDirectory
DeviceConfiguration
DeviceConfigurationRangeToMinimalXSLT
Device ConfigurationToMinimalXSLT
NLogSQLDataSource
NLogSQLPassword
SCSServerIP
TemplateRootDirectory

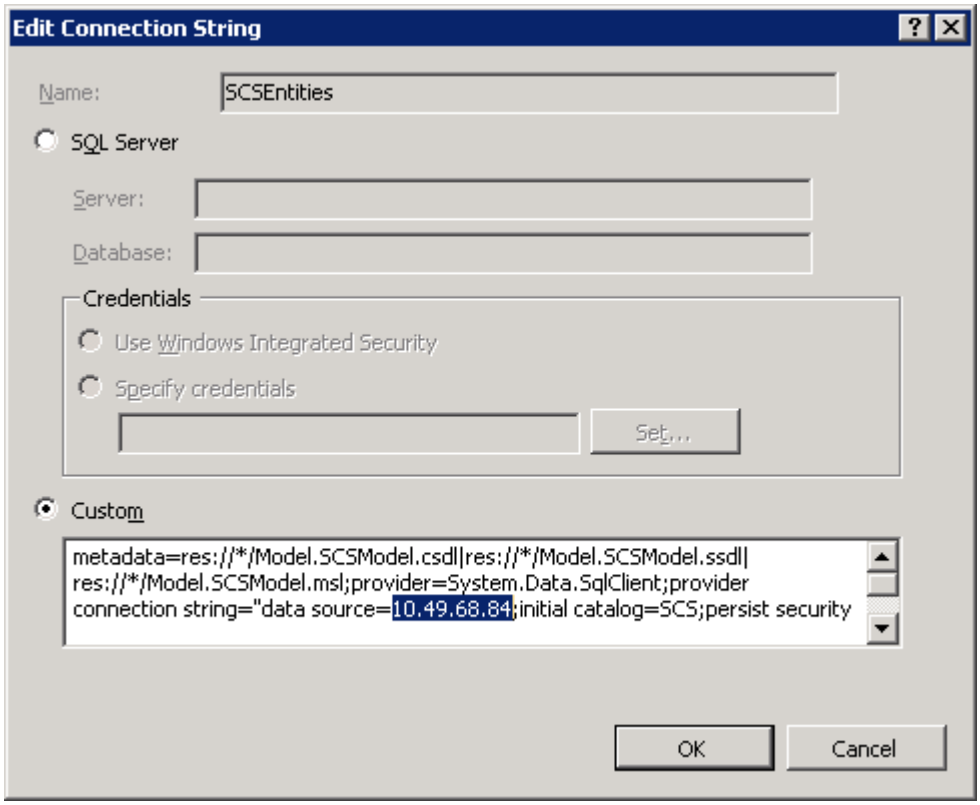
Specifically, the server IP addresses need to be made to those used on the ship, and the passwords must be entered. Example settings are given in the figure below.



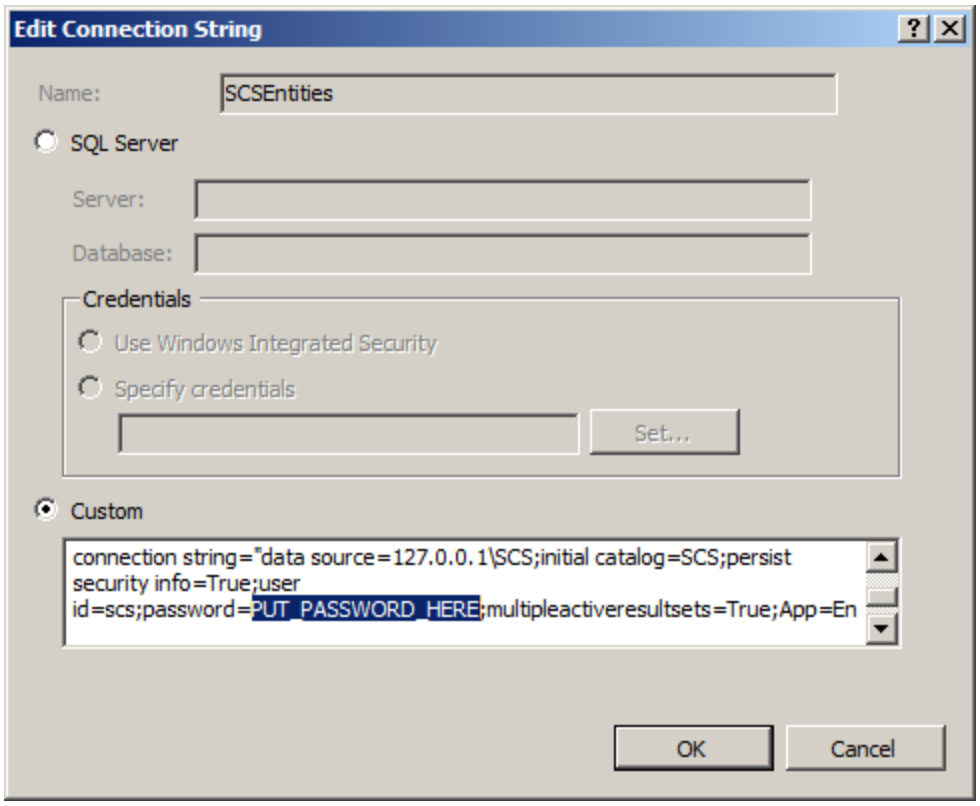
Example application settings that will have to have IPs customized for each particular ship and server.

Double click on the entry to edit.

Afterward, similarly click on the **Connection Strings** icon to set the data source IP and password. Double click the **SCSEntities** entry to edit the custom connection string. The data source value must be set to the IP of the SCS database server, and password must also be set to the appropriate value, which is not disclosed in this document.



Example of where to edit the data source IP address in the connection string.



Example of where to edit the password in the connection string.

After these settings are made, the sections of the Web.config where they are stored must be encrypted.

To encrypt sections within the Web.config, use the **ASP.NET IIS Registration Tool, aspnet_regiis.exe**, which typically lives in the version subdirectories of C:\Windows\Microsoft.NET\Framework64. Since we are currently using v4, find the highest v4.*x* directory.

To execute these commands, run the command window program, **cmd**, as an administrator. Change directory to C:\Windows\Microsoft.NET\Framework64 by typing

cd \windows\microsoft.net\framework64

The program **aspnet_regiis.exe** to use will be in the directory of the most current version of .NET. Type the **dir** within the command window. At the time of this writing, v4.0.30319 is the most current version. Type :

> **cd v4.0.30319**
> to change to that directory.
> The command for encrypting is generally as follows:
> **aspnet_regiis.exe –pef** *<feature> <path to Web.config directory>*

The commands for encrypting the connectionStrings and appSettings sections, respectively, are as follows:

```
aspnet_regiis.exe -pef "connectionStrings" "C:\inetpub\wwwroot\SCSWebDashboard"
aspnet_regiis.exe -pef "appSettings" "C:\inetpub\wwwroot\SCSWebDashboard"
```

To decrypt, if ever needed, use the **–pdf** option instead of **–pef**.

Starting, stopping, and restarting the Web site

The Web site may be started, stopped, and restarted from IIS by right-clicking on the **SCSWebDashboard** item, selecting **Manage Web Site**, and then choosing Start, Stop, or Restart.

Creating the NLog database

The NLog database is for logging error message and other information from the SCSWebDashboard Web site. The database will eventually be included among the tasks of an automated installer, and the logging tables will be part of the SCS database. For this beta version of SCSWebDashboard, however, a separate database will be created. To manually create the database, Microsoft SQL Server Management Studio will be used.

Open Microsoft SQL Server Management Studio. Enter the appropriate login information for an administrator on the server of choice. Right click on **Databases**, and select **New Database…** Enter *nlogdb* for the **Database name**, and then click OK.

In the **Standard toolbar** docked at the top, click the **New Query** button. In the editable window that appears, copy and paste the following script to create the user and tables:

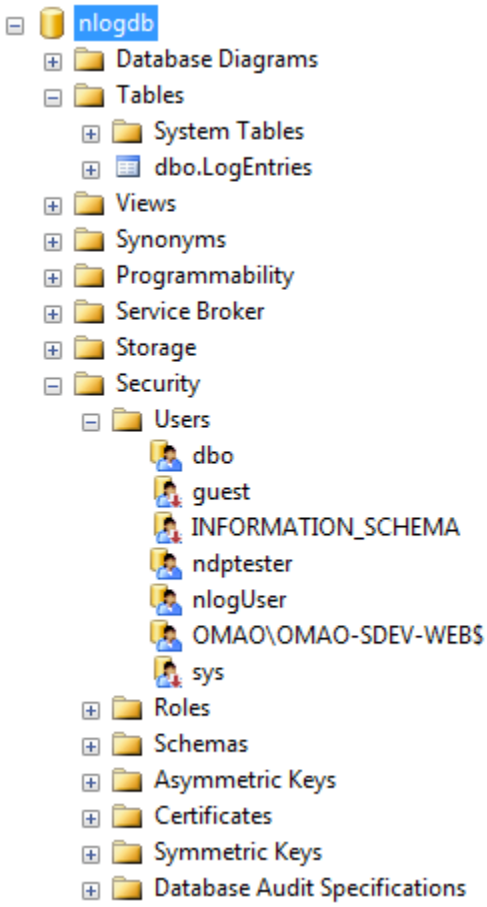
```
USE [master]
GO

/* For security reasons the login is created disabled and with a random
password. */
/****** Object:  Login [nlogUser]    Script Date: 06/17/2013 16:13:13 ******/
CREATE LOGIN [nlogUser] WITH PASSWORD=N'Ob©îTI`Ý!4CÝà ± vý&.N5¿Ï3$ w#',
DEFAULT_DATABASE=[nlogdb], DEFAULT_LANGUAGE=[us_english],
CHECK_EXPIRATION=OFF, CHECK_POLICY=OFF
GO

ALTER LOGIN [nlogUser] DISABLE
GO

USE [nlogdb]
GO
CREATE USER [nlogUser] FOR LOGIN [nlogUser] WITH DEFAULT_SCHEMA=[dbo]

GO
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[LogEntries](
      [id] [int] IDENTITY(1,1) NOT NULL,
      [TimeStamp] [datetime2](7) NULL,
      [MachineName] [nvarchar](128) NULL,
      [Origin] [nvarchar](128) NULL,
      [LogLevel] [nvarchar](10) NULL,
      [Message] [nvarchar](4000) NULL,
```

```
	[Exception] [nvarchar](4000) NULL,
	[StackTrace] [nvarchar](4000) NULL,
PRIMARY KEY CLUSTERED
(
	[id] ASC
)WITH (PAD_INDEX  = OFF, STATISTICS_NORECOMPUTE  = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS  = ON, ALLOW_PAGE_LOCKS  = ON) ON [PRIMARY]
) ON [PRIMARY]
GO
```

The script may be run by clicking the **Execute** button.

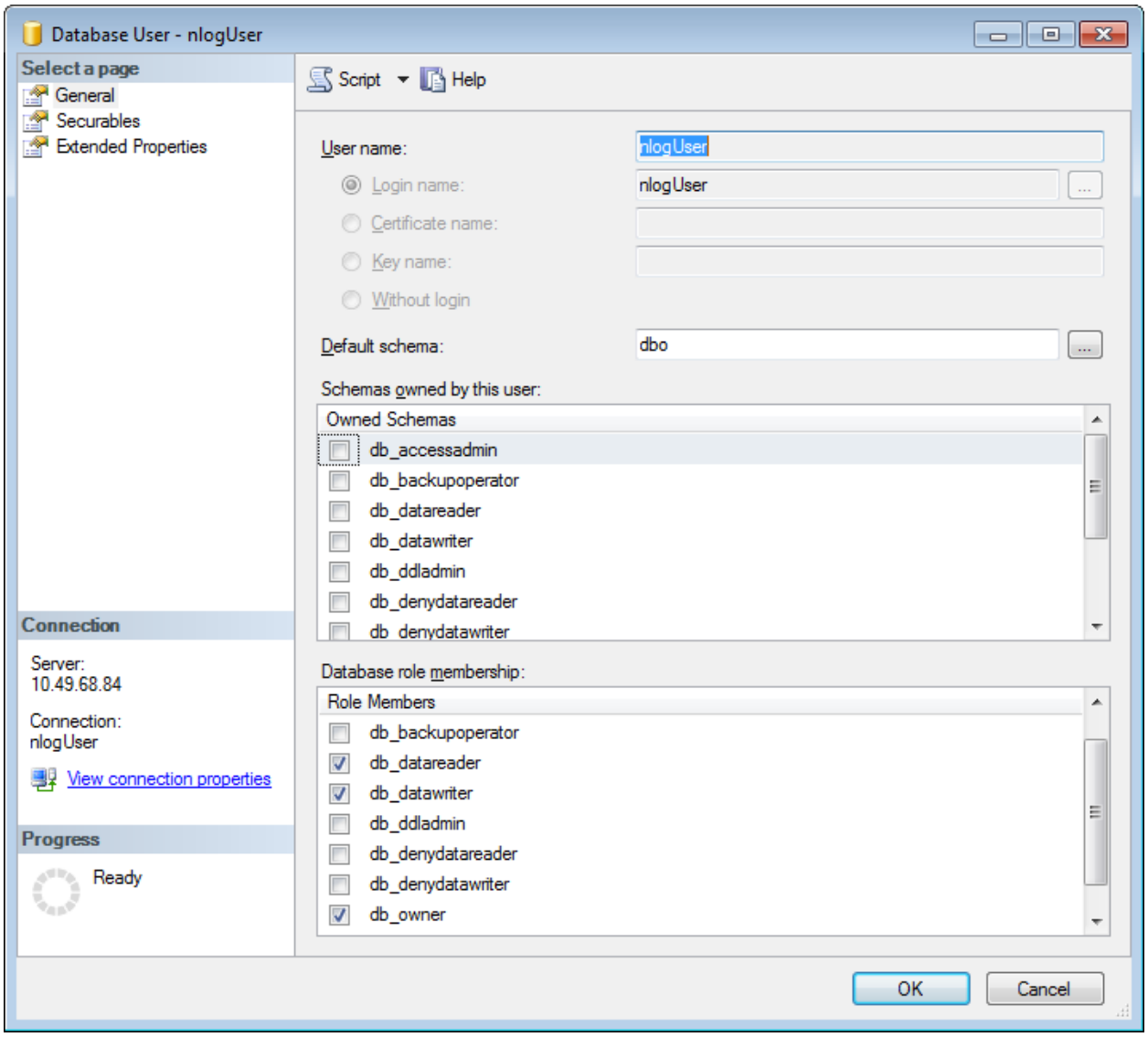
After running the scripts, verify that the table **dbo.LogEntries** was created under the **Tables** section.

Lastly, in the Security section, open Users and verify the nlogUser user was created.



Microsoft SQL Server Management Studio view of the newly created nlogdb database, dbo.LogEntries table, and nlogUser user.

Right click on the nlogUser item and select **Properties**. In the **Database User** window, set the **database role membership** under that section for nlogUser to `db_datareader`, `db_datawriter`, and `db_owner` by checking those checkboxes.



Example settings for nlogUser.

Appendix A: Installing IIS 7 on Windows Server 2008 R2 for Deploying SCS ClientDashboard

Adopted from technical notes by the Microsoft IIS Team

Install IIS 7.5 on Windows Server 2008 R2

IIS can be installed using the Server Manager interface after the Windows Server operating system is installed. When IIS is chosen from the Server Manager, the basic components and services needed for IIS are automatically selected.

1. Click **Start** -> **All Programs** -> **Administrative Tools** -> **Server Manager**.

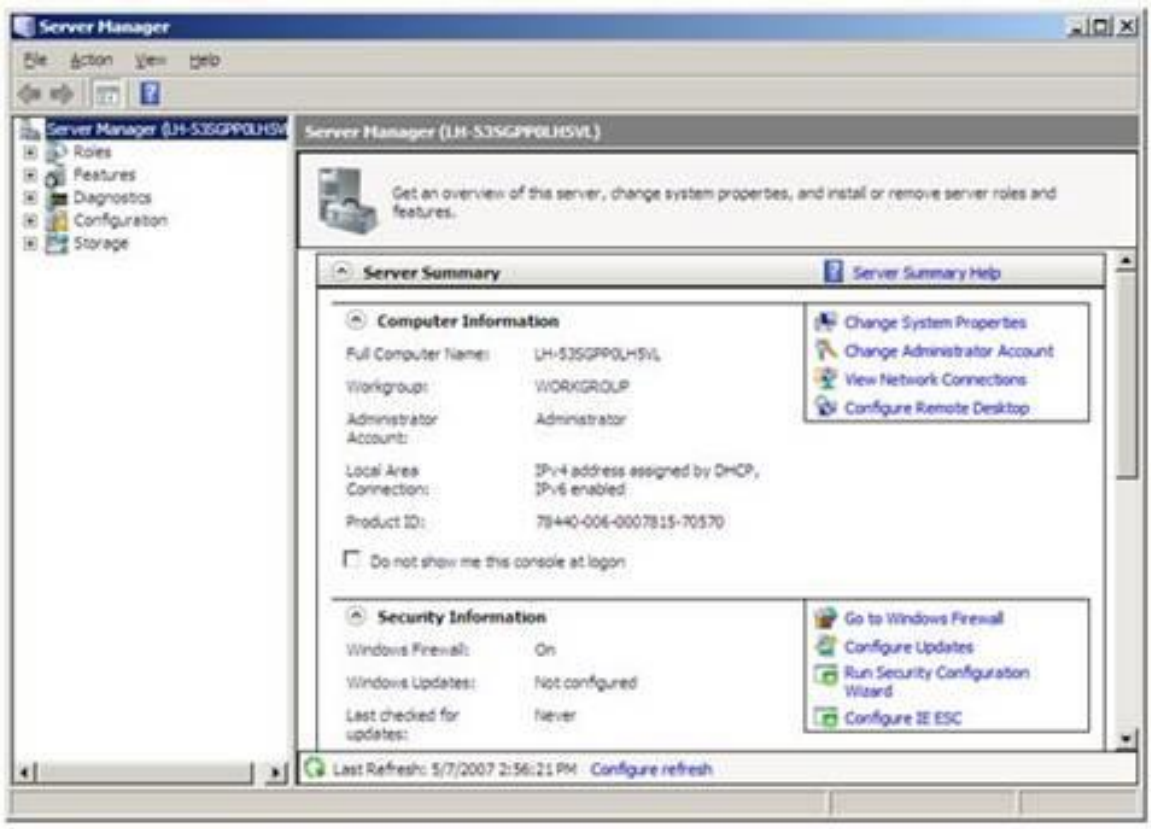


Figure 2: Server Manager

2. In the **Server Manager** window, scroll down to **Roles Summary**, and then click **Add Roles**. The **Add Roles Wizard** will start with a **Before You Begin** page. The wizard asks for verification of the following:

a. The administrator account has a strong password.

b. The network settings, such as IP addresses, are configured.

c. The latest security updates from Windows Update are installed.

3. Select **Web Server (IIS)** on the **Select Server Roles** page. An introductory page will open with links for further information.

Note: When you use the **Add Roles Wizard to install** IIS, you get the default installation, which has a minimum set of role services. If you need additional IIS role services, such as **Application Development** or **Health and Diagnostics**, make sure to select the check boxes associated with those features in the **Select Role Services** page of the wizard.

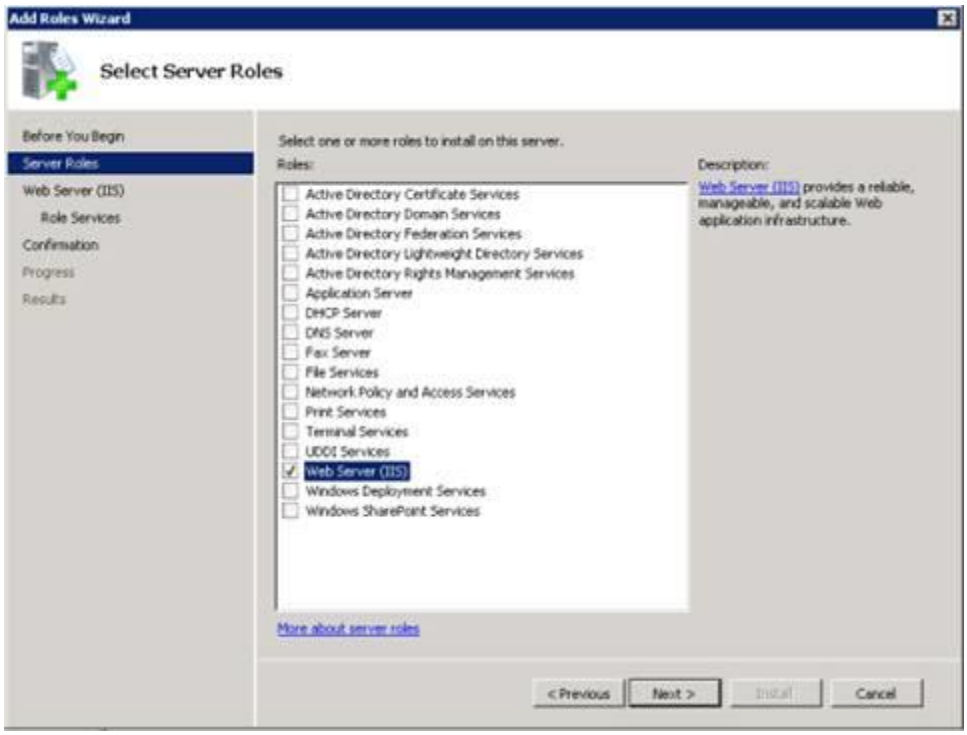


Figure 3: Select Server Roles

4. Select the IIS services to be installed on the **Select Role Services** page. Add only the modules necessary. In this case, ASP.NET is selected, and a description of ASP.NET appears in the right pane. Once desired modules are added, click **Next**.

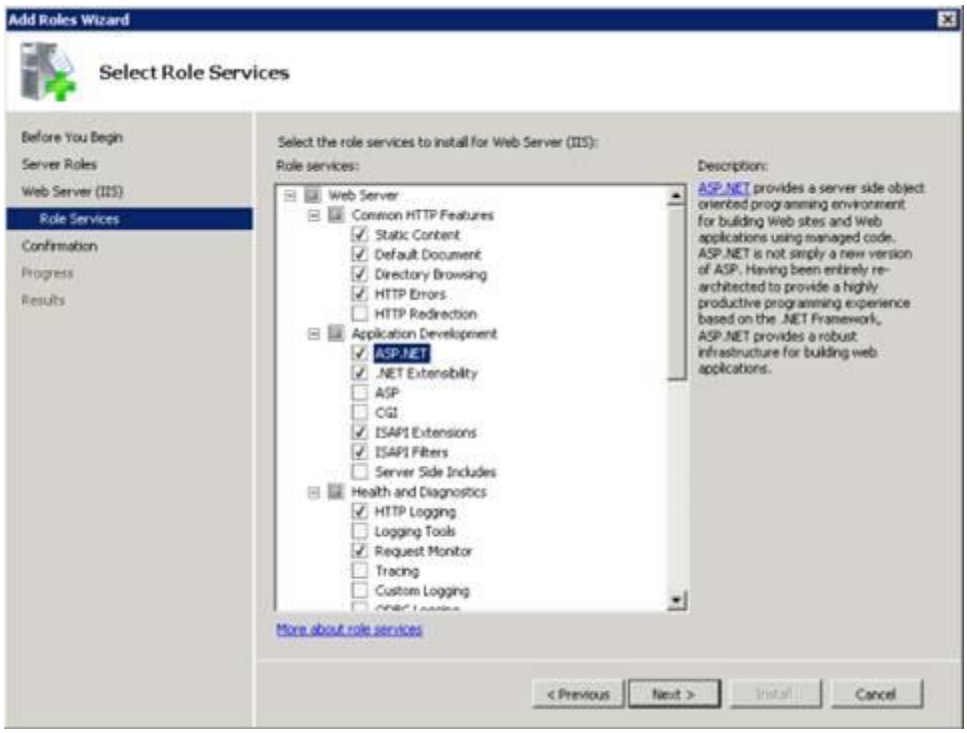


Figure 4: Select Role Services

5. Add any required role services.

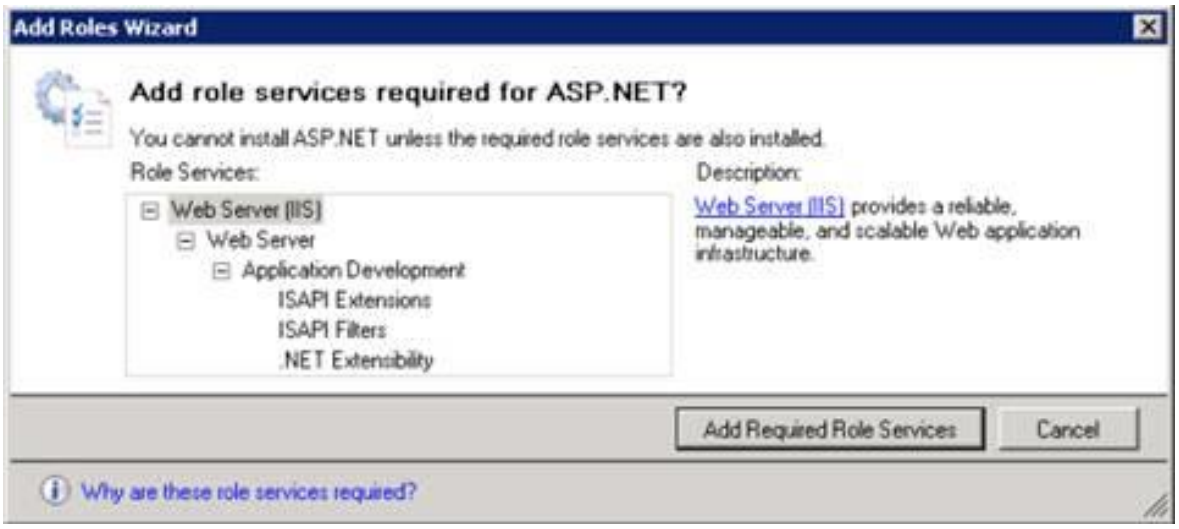


Figure 5: Wizard warning page

6. IIS is now installed with a default configuration for hosting ASP.NET on Windows Server. Click **Close** to complete the process.

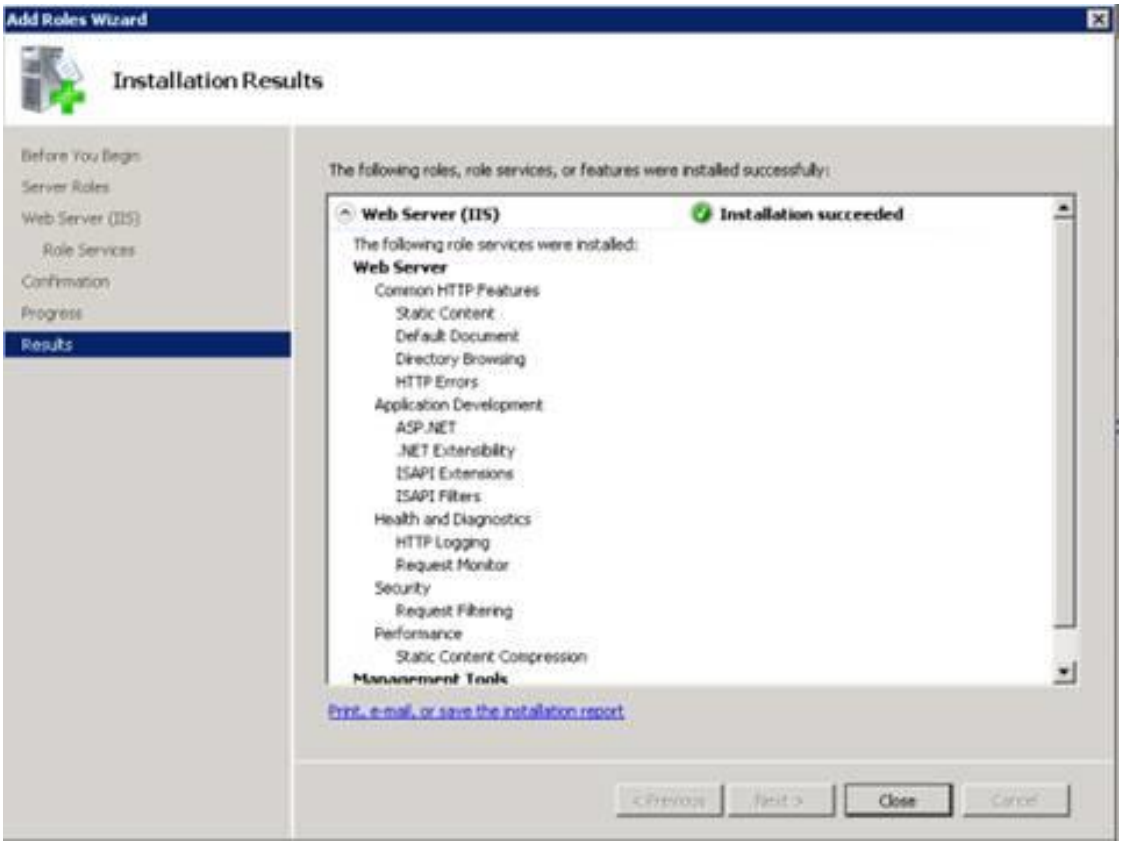


Figure 6: Installation Results page

7. Confirm that the Web server works by using http://localhost.

Figure 7: Default Web site

Note: Install only the absolutely necessary IIS services to minimize the IIS installation footprint. This also minimizes the attack surface, which is one of the benefits of IIS 7 and above.

Install IIS 7.0 on Windows Server 2008

1. To start Server Manager, click **Start Menu** -> **All Programs** -> **Administrative Tools** -> **Server Manager**. The Server Manager window opens.

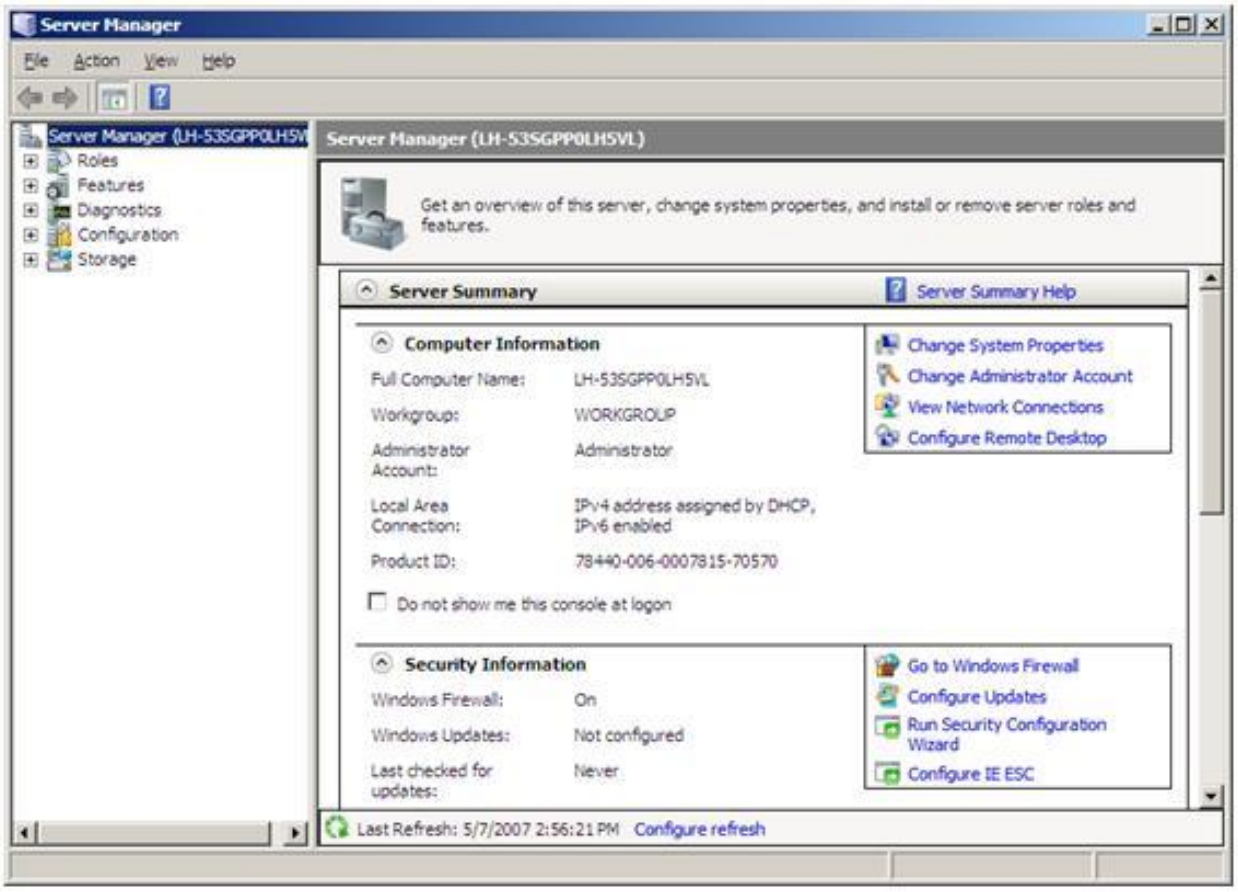


Figure 8: Server Manager

2. In the **Server Manager** window, select **Roles.** The Role Summary View is displayed.

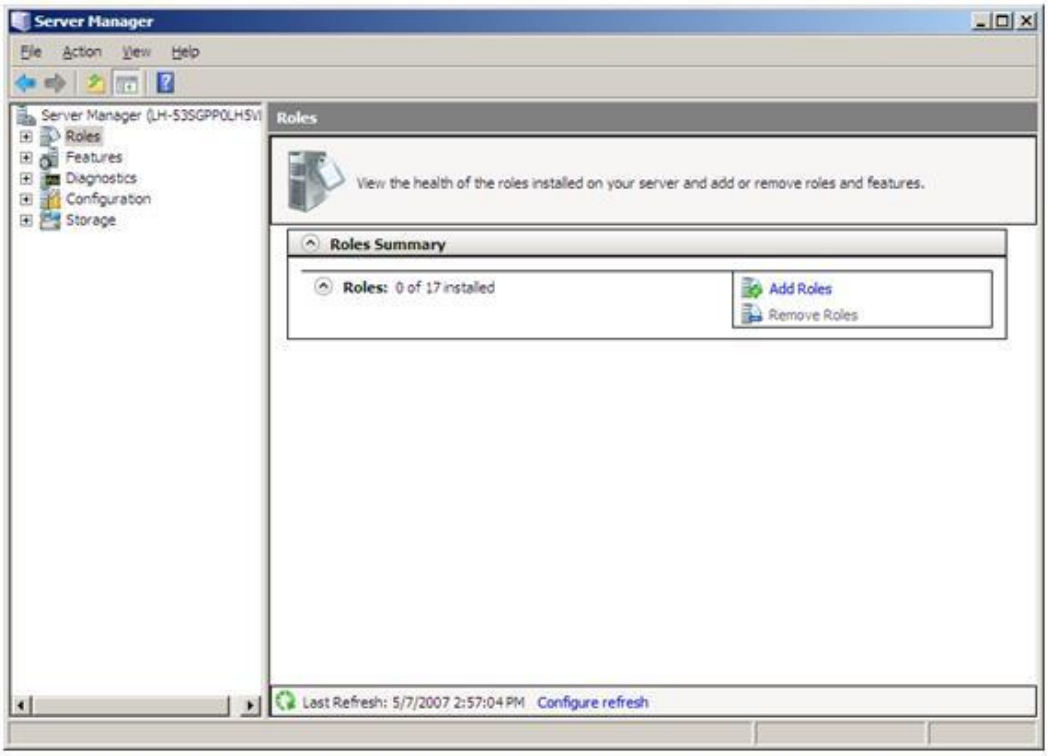


Figure 9: Start Add Roles Wizard

3. Click **Add Roles.** The Add Roles Wizard opens. Click **Next** to select roles to install.

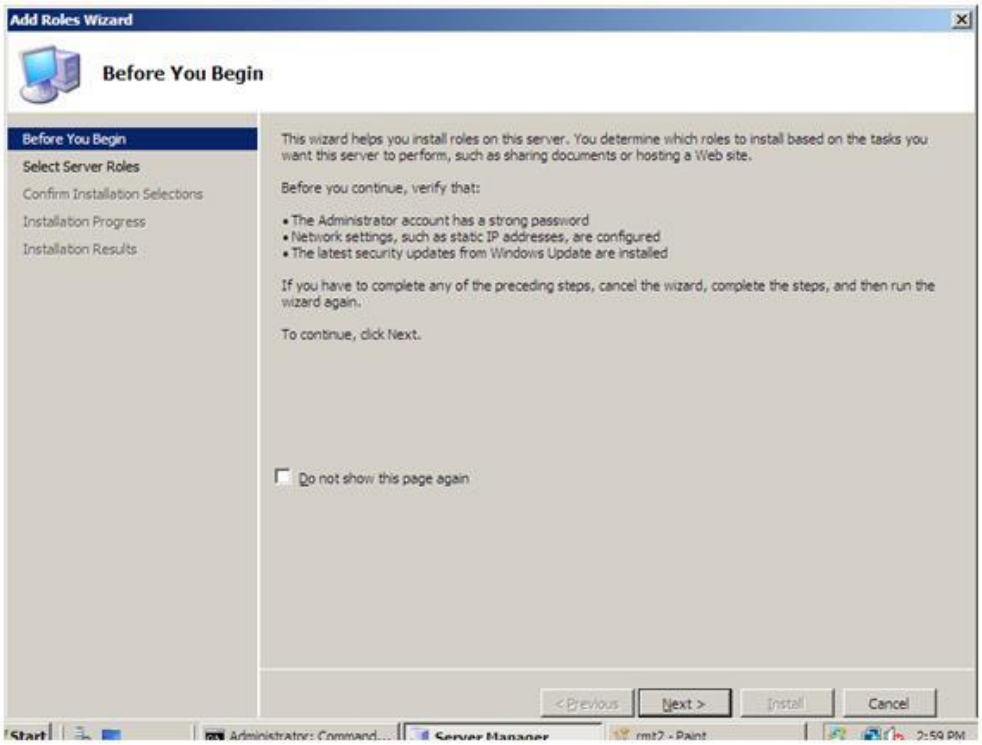


Figure 10: Add Roles Wizard Introduction

4. Select **Web Server (IIS)**.

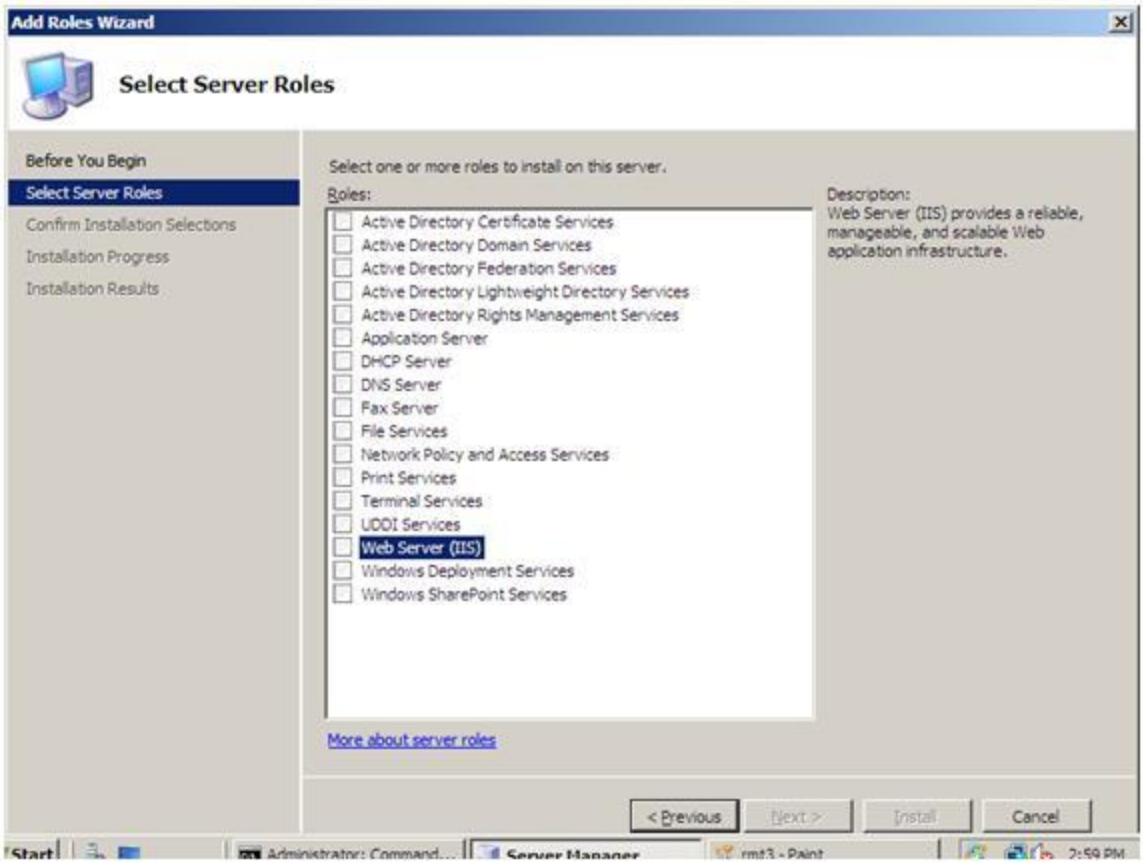


Figure 11: Select Web Server (IIS) in Add Roles Wizard

5. The Add Roles Wizard notifies you of any required dependencies; since IIS depends on the Windows Process Activation Service (WAS) feature, the following informational dialog box appears. Click **Add Required Role Services** to continue.

Figure 12: Add Dependencies

6. The Web Server is now selected for install. The Select Server Roles dialog box opens. Click **Next** to continue.

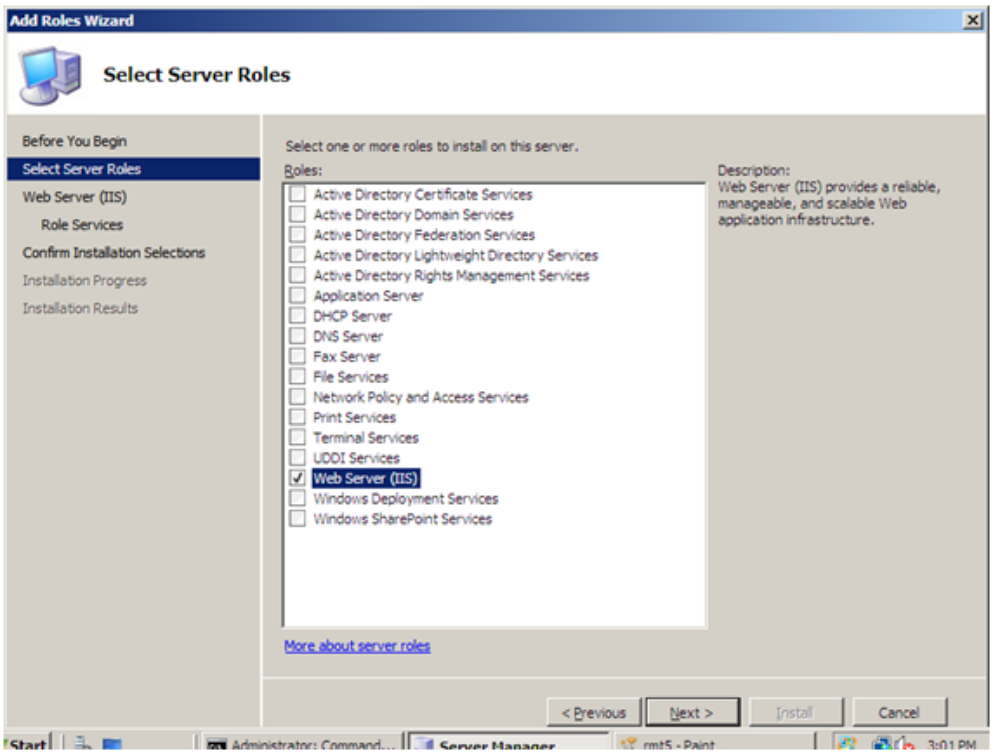


Figure 13: Selected Web Server (IIS)

7. The following dialog box and information appears. Click **Next** to continue.

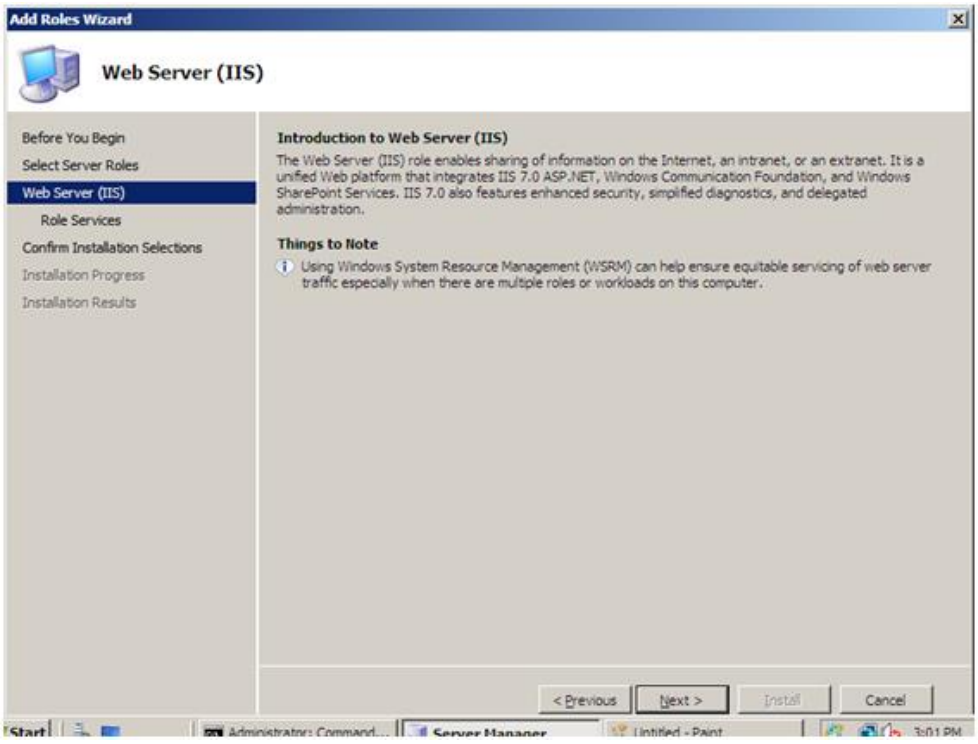


Figure 14: Introduction to Web Server dialog box

8. The Add Roles Wizard displays a list of all IIS 7.0 features available to install as shown below. Note that features comprising the default install are pre-selected.

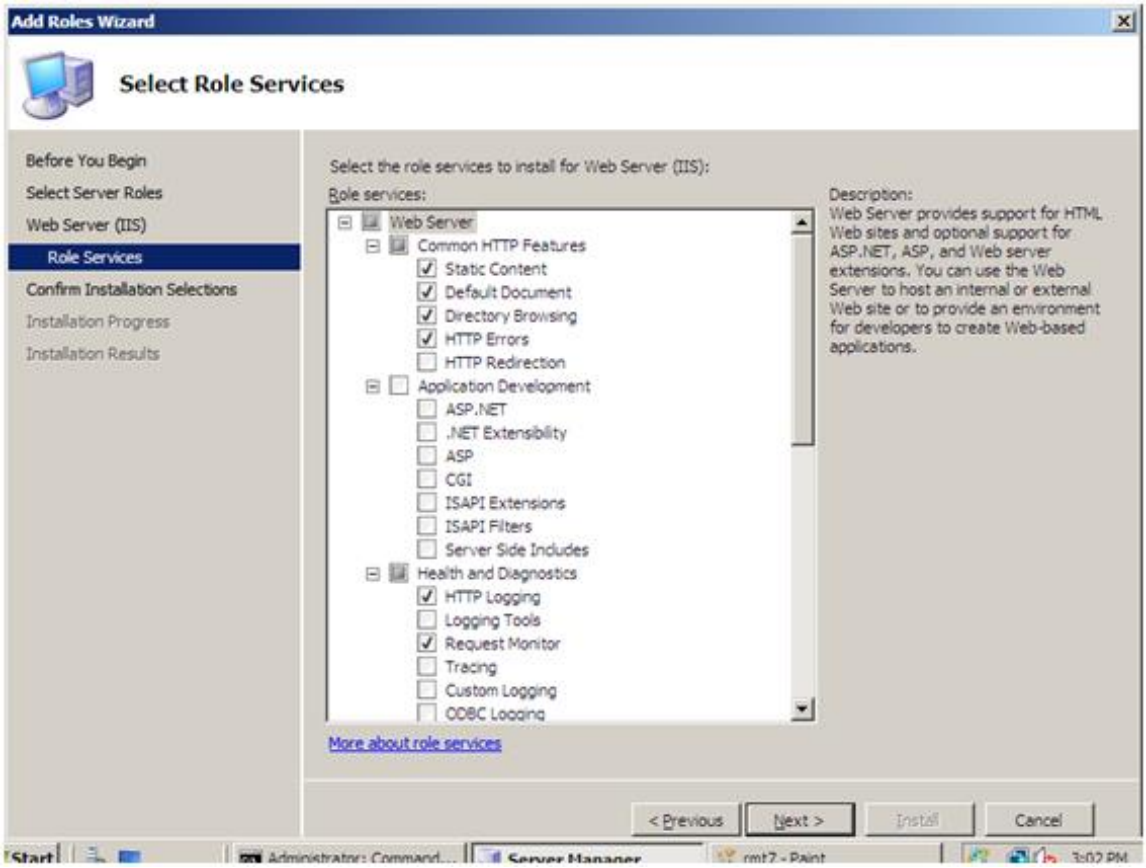


Figure 15: Web Server Features Listed

9. To install just the IIS 7.0 default features, click the **Install** button, and then proceed to Step 14. If you need to install additional features, proceed to step 10.

10. For this example, we install additional IIS features. Select the check box for ASP.NET. The Wizard warns if adding an IIS feature will also cause other features to be installed.

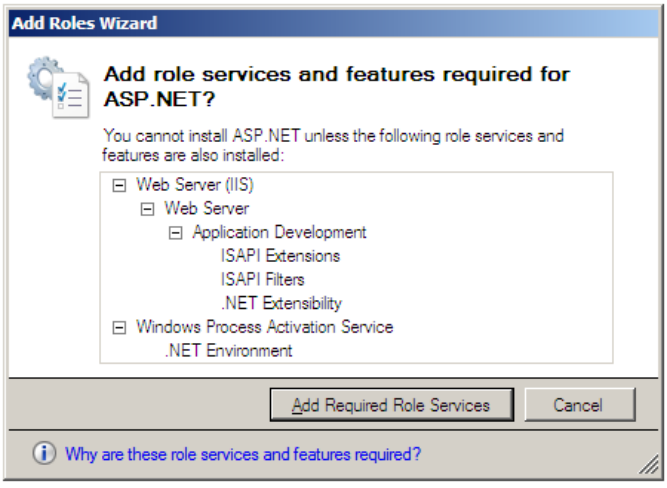


Figure 16: Dependency Information

11. Click **Add Required Role Services** to continue.

12. Continue selecting additional IIS Role Services features to install.

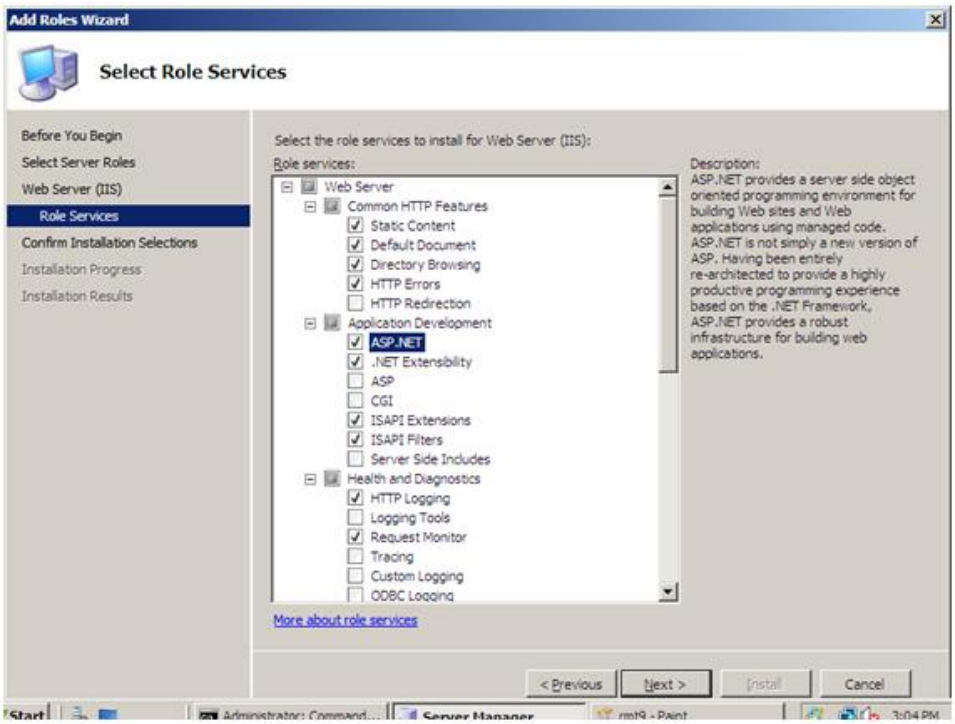


Figure 17: Add Features For Web Server

13. When you have selected all the features you require, click **Next** to continue.

14. The Wizard provides a summary of what will be installed.

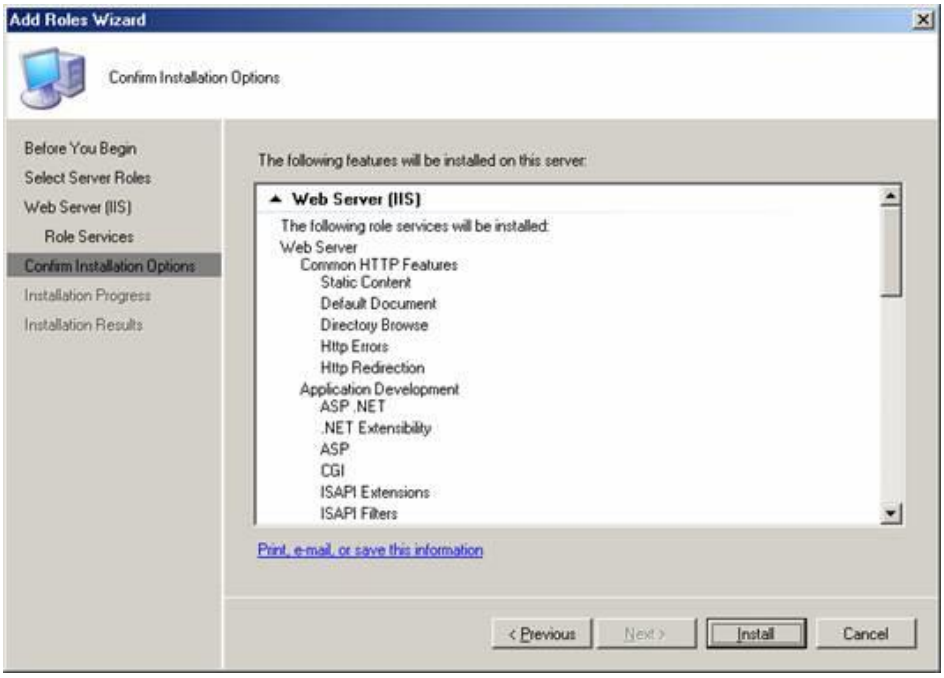


Figure 18: Summary of Features

15. Click **Install** to continue. The Installation Progress dialog box opens.

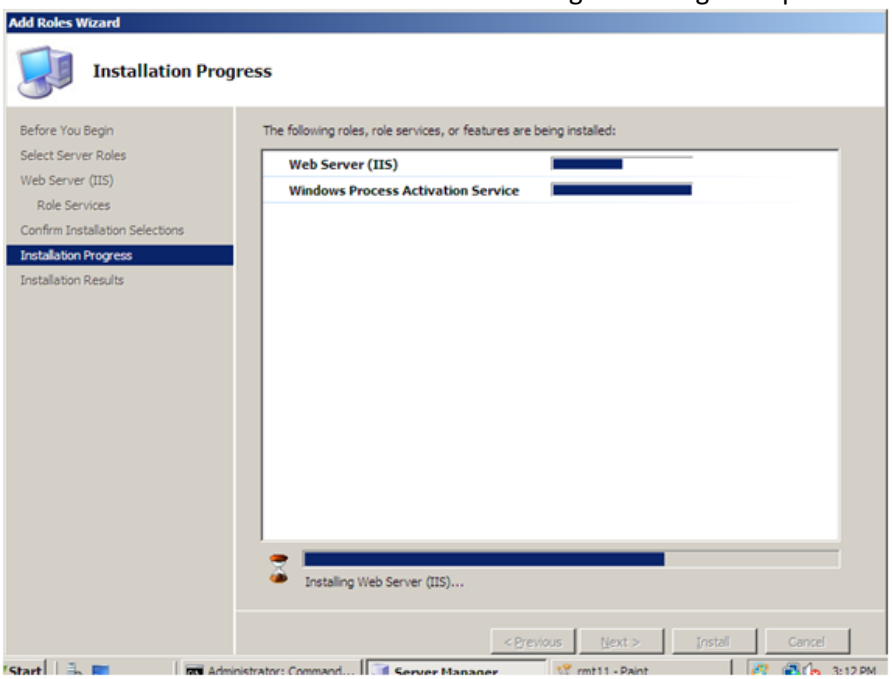


Figure 19: Install Progress

16. When the IIS 7.0 installation is complete, the following dialog box opens. Click **Close** to return to the Server Manager.

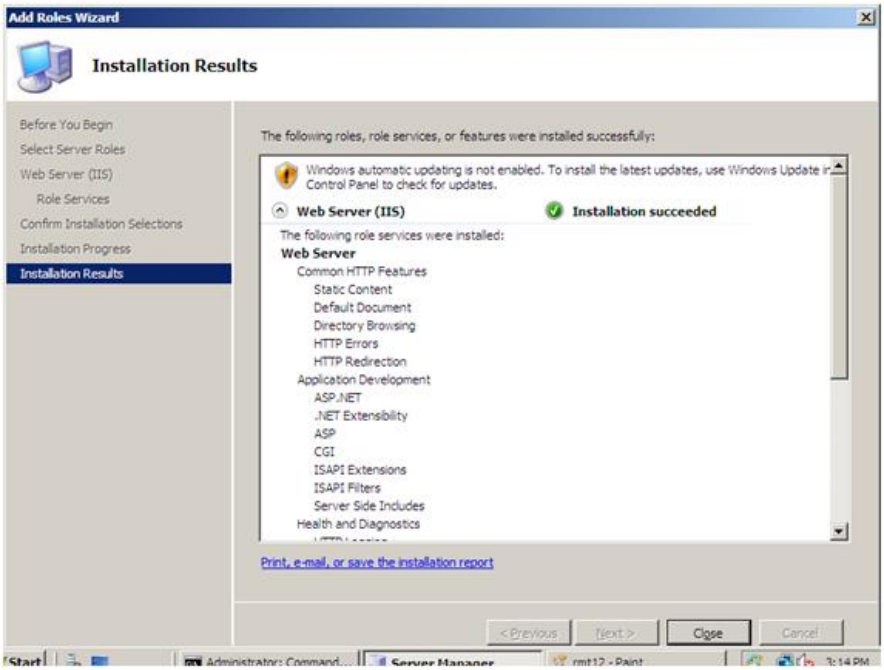


Figure 20: Installation Summary

17. You can now perform a quick check to verify that IIS 7.0 is installed. Start the **Windows Internet Explorer** Web browser, and enter the address **http://localhost**. You should see the default IIS "Welcome" page.