## 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 <u>Download for .NET 4</u> 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 <u>http://www.microsoft.com/getsilverlight/Get-Started/Install/Default.aspx</u>. 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.

Add Web Site		<u>?</u> ×
Site name:	Application pool:	
SCSWebDashboard	SCSWebDashboard	Select
Content Directory		
Physical path:		
C:\inetpub\wwwroot\SCSWeb	Dashboard\	
Pass-through authentication		
Connect as Test Settin	ngs	
Binding		
Type: IP addre	ess: Port	t:
http 🔽 10.49.6	8.31 💌 81	
Host name:		
Example: www.contoso.com o	r marketing.contoso.com	
🔽 Start Web site immediately		
	ОК	Cancel

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.

Edit Connection String	? ×
Name: SCSEntities	_
C SQL Server	
Server:	
Database:	
Credentials	
C Use <u>₩</u> indows Integrated Security	
C Specify credentials	
Set	
• Custom	
metadata=res://*/Model.SCSModel.csdl res://*/Model.SCSModel.ssdl  res://*/Model.SCSModel.msl;provider=System.Data.SqlClient;provider connection string="data source= <mark>10.49.68.84</mark> ;initial catalog=SCS;persist secu	rity 🗸
ОК	Cancel

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

Edit Connection	1 String	<u>?</u> ×
Name:	SCSEntities	
C SQL Server		
Server:		
Database:		
Credentia	s	
C Use W	ndows Integrated Security	
C Specify	r credentials	
	Set	
Custom		
connection security inf id=scs;pas	string="data source=127.0.0.1\SCS;initial catalog=SCS;persist o=True;user sword= <mark>PUT_PASSWORD_HERE</mark> ;multipleactiveresultsets=True;App=E	En V
	OK C	Cancel

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 [nloqUser] WITH PASSWORD=N'Ob©îTI`Ý!4CÝà ± vý&.N5;Ï3$ w#',
DEFAULT DATABASE=[nloqdb], DEFAULT LANGUAGE=[us english],
CHECK_EXPIRATION=OFF, CHECK POLICY=OFF
GO
ALTER LOGIN [nloqUser] 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.

🧾 Database User - nlogUser			- • ×
Select a page	Script 💌 🖪 Help		
General			
Tecurables	<u>U</u> ser name:	nlogUser	
	<u>Login name:</u>	nlogUser	
	O Certificate name:		
	Mey name:		
	Without login		
	Default schema:	dbo	
	Schemas owned by this user:		
	Owned Schemas		
	db_accessadmin		
	db_backupoperator		E
	db_datareader		
	db_datawriter		
	db_ddladmin		
C	db_denydatareader		
Connection	db denydatawriter		· · · · · · · · · · · · · · · · · · ·
Server: 10.49.68.84	Database role <u>m</u> embership:		
Connection:	Role Members		^
nlogUser	db_backupoperator		
View connection properties	db_datareader		
	db_datawriter		=
Progress			
Ready	db_denydatareader		
	db_oerryoatawriter		
			<b>.</b>
		ОК	Cancel

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**.

Before You Begin Server Roles	Select the role services to install for Web Server (IIS): Role services:		Description:
Web Server (IIS) Role Services Confemation Progress Results	Web Server  Web Server  Web Server  Web Server  Web Server  Static Content  Default Document  Directory throwsing  HTTP Refeaction  Application Development  Methods  NET Extensibility  ASP  CGI  Server Side Includes  Health and Diagnostics  Health and Diagnostics  HTTP Logging  Logging Tools  Request Montor  Tracing  Coder Logging  Coder Logend  Coder Logging  Co	1	ASP.NET provides a server side object oriented programming environment for building Web sites and Web applications using managed code. ASP.NET is not singly a new version of ASP. Having been entirely re- architected to provide a highly productive programming experience based on the .MET framework, ASP.NET provides a robust infrastructure for building web applications.

Figure 4: Select Role Services

#### 5. Add any required role services.

Cfill	Add role services required for AS You cannot install ASP.NET unless the required rol	SP.NET? le services are also installed.
	Web Server [IIS]  Application Development ISAPI Extensions ISAPI Filters NET Extensibility	Web Server [IIS] provides a reliable, manageable, and scalable Web application infrastructure.
		Add Required Role Services Cancel

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.

before you begin Server Roles	The following roles, role services, or features w	ere installed successfully:	
Web Server (IIS) Role Services Confirmation Progress Roguits	Web Server (IIS)     The following role services were installed:     Web Server     Common HTTP Peatures     Static Content     Default Document     Directory Browsing     HTTP Errors     Application Development     ASP.NET     .NET Extensions     ISAPI Extensions     ISAPI Filters     Heath and Diagnostics     HTTP Logging     Request Monitor     Security     Request Filtering     Performance     Static Content Conservation	Installation succeeded	

Figure 6: Installation Results page

010	B • B • B • B	Erge + Q Tpr
Williom Bienvenue RSI Velkommen Benvenuto Welkom Valkommen Hos Geldiniz	Welcome まうこそ Bienvenido Bem-vindo Vitejte Tervetuloa orean or arc Vetecome 次辺 Witamy の として の の として の の の の の の の の の の の の の の の の の の の	

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).

lefore You Begin clect Server Roles iconfirm Installation Selections installation Progress installation Results	Select one or more roles to install on this server. Boles: Active Directory Certificate Services Active Directory Domain Services Active Directory Pederation Services Active Directory Lightweight Directory Services Active Directory Rights Management Services PHCP Server Fax Server Fax Server Fiels Services DOID Services UDOI Services Windows Deployment Services Windows SharePoint Services	Description: Web Server (IIS) provides a reliable, manageable, and scalable Web application infrastructure.
	More about server roles	

*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.

Add role services required for ASP.NET? You cannot install ASP.NET unless the following role services are also installed:
Web Server (IIS)
Add Required Role Services Cancel

*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.

ld Roles Wizard	
Web Server (I	IS)
efore You Begin elect Server Roles leb Server (ITS) Role Services onfirm Installation Selections istallation Progress istallation Results	Introduction to Web Server (IIS)         The Web Server (IIS) role enables sharing of information on the Internet, an intranet, or an extranet. It is a shareboint Services. IIS 7.0 also features enhanced security, simplified diagnostics, and delegated administration.         Things to Note         ① Using Windows System Resource Management (WSRM) can help ensure equitable servicing of web server traffic especially when there are multiple roles or workloads on this computer.

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.

4	Add Roles	Wizard	
		Add role services and features required for ASP.NET?	
		You cannot install ASP.NET unless the following role services and features are also installed:	
		Web Server (IIS)     Web Server	
		<ul> <li>Application Development ISAPI Extensions</li> </ul>	
		ISAPI Filters .NET Extensibility	
		<ul> <li>Windows Process Activation Service</li> <li>.NET Environment</li> </ul>	
		Add Required Role Services Cancel	
	i) Why	y are these role services and features required?	

Figure 16: Dependency Information

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

Add Roles Wizard		2
Select Role Ser	vices	
Before You Begin Select Server Roles Web Server (IIS)	Select the role services to install for Web Server (IIS): Role services: Web Server Common HTTP Seatures	Description: ASP.NET provides a server side object oriented programming environment for
Role Services Confirm Installation Selections Installation Progress Installation Results	Static Content  Default Document  Directory Browsing  HTTP Redirection  ASP  Cite Server Side Includes  Health and Diagnostics  Kequest Monitor  Tracing  Custom Logging  Cus	applications using managed code. ASP.NET is not simply a new version of ASP. Having been entrely productive programming experience based on the .NET Framework, ASP.NET provides a robust infrastructure for building web applications.
1.2.2	< Previous	tjext > [nstal] Cancel

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	l to continue.	The Installation	Progress dialo	og box opens.
±0.	Cher motal		The motunation	TTOBICSS alar	B box opens.

Add Roles Wizard	
Installation Prog	iress
Before You Begin Select Server Roles	The following roles, role services, or features are being installed: Web Server (IIS)
Role Services	Windows Process Activation Service
Installation Progress	
pistaliouuri Mesuits	
	Installing Web Server (IIS)
	< Previous [Vext > [Install Cancel
Start 🗄 📰 🕅 🕅 Adm	inistrator: Command 📑 Server Manager 😵 mt11 - Paint 🛛 😰 🖓 🏠 3:12 PM

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.

Before You Begin Select Server Roles Web Server (IIS)	The following roles, role services, or fea	tures were installed successfully: not enabled. To install the latest updates, use Windows Upd tes.	ate ir 📥
Role Services Confirm Installation Selections	Web Server (IIS) The following role services were inst	Installation succeeded aled:	
Installation Results	Common HTTP Features Static Content Default Document Directory Browsing HTTP Redirection Application Development ASP.NET .NET Extensibility ASP CGI ISAPI Extensions ISAPI Filters Server Side Includes Health and Dispositos		
	1 mm 1 and a		-

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.