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**FactoryTalk® View
Site Edition
IIS Handbook**

Rev. 1.1, May 2007

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Introduction

This document will refer to the product as FactoryTalk® View Site Edition; however, RSView® Supervisory Edition can be used interchangeably unless specifically noted that the information is for version 5.00 (CPR9) only.

This document describes the default use of IIS (Internet Information Server) by the FactoryTalk View Site Edition (SE) HMI Server. Understanding how this works will be of importance to customers and their IT departments. IIS is not always installed by default on machines targeted as FactoryTalk View SE HMI Servers and if it is installed, it is not always something that IT departments are entirely comfortable with, at least initially. However, FactoryTalk View SE uses IIS for important reasons such as high performance and scalability for FactoryTalk View SE customers.

This document addresses the default configurations for IIS and covers Windows 2000 Server, Windows 2003 Server and Windows XP as the FactoryTalk View SE HMI Server operating system. It also covers RSView Enterprise version 4.00 (CPR7) and the default installation of FactoryTalk View Site Edition version 5.00 (CPR9). It is beyond the scope to consider other applications (outside of FactoryTalk View SE) that may need IIS functionality.

The Rockwell Automation Knowledgebase should always be consulted for information that may supersede this document.

Definitions, Acronyms and Abbreviations

IIS	Internet Information Server
ISAPI	Internet Services API, Microsoft's original web integration API
WinINet	Microsoft's low level Internet protocol API
HTTP	Hypertext Transport Transmission Protocol
WebDAV[1]	Web based Distributed Authoring and Versioning
Virtual Directory	A mapping from a Web site (accessible via a Web URL) to a physical directory on the file system where the Web Server resides
VDir	Virtual Directory abbreviation
FTP	File Transfer Protocol
SMTP	Simple Mail Transport Protocol

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[1] For more information on WebDAV http://www.webdav.org/

Background

The FactoryTalk View SE HMI Server uses IIS to deliver Graphic Displays and other file-based components to the FactoryTalk View SE clients using WebDAV. When FactoryTalk View SE clients issue commands that must be run on the HMI Server, these are sent using HTTP to an ISAPI extension running under IIS. Certain other functions between FactoryTalk View SE clients and the FactoryTalk View SE HMI Server also use ISAPI extensions. This document will describe in considerable detail all the facets of FactoryTalk View SE's use of IIS.

Revision History

- Revision 1.0:   April 2007 - Initial release
- Revision 1.1:   May 2007 - Rebranding and OS screen capture updates, plus minor changes. Renamed document to FactoryTalk View Site Edition IIS Handbook.

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Introduction

The FactoryTalk® View SE HMI Server utilizes Internet Information Server (IIS) to provide services to clients. In particular, Graphics files, images, parameters, recipes, macros etc. are sent by IIS to clients via the HTTP protocol. Further, many HMI Server management functions[2] are also implemented as IIS extensions. The latter are called ISAPI extensions. Finally, FactoryTalk View SE commands which need to be directed from the Client to the HMI Server are also implemented as ISAPI extensions.

FactoryTalk View SE uses IIS in order to reduce the number of remote calls using DCOM. While DCOM is a high performance protocol used for fast transmission of I/O data (e.g. OPC and FactoryTalk® Live Data), it is overkill for some simple request-response tasks like file retrieval. HTTP on the other hand, served via IIS, is ideal for file retrieval.

Installation of IIS

Microsoft Internet Information Server (IIS) is a service that is part of a default install of Windows 2000 and 2003 Server. IIS provides Web Server (HTTP), WebDAV, FTP, and SMTP functionality. To check if IIS is installed, launch the control panel "Add or Remove Programs" task, as shown in Figure 1 below:
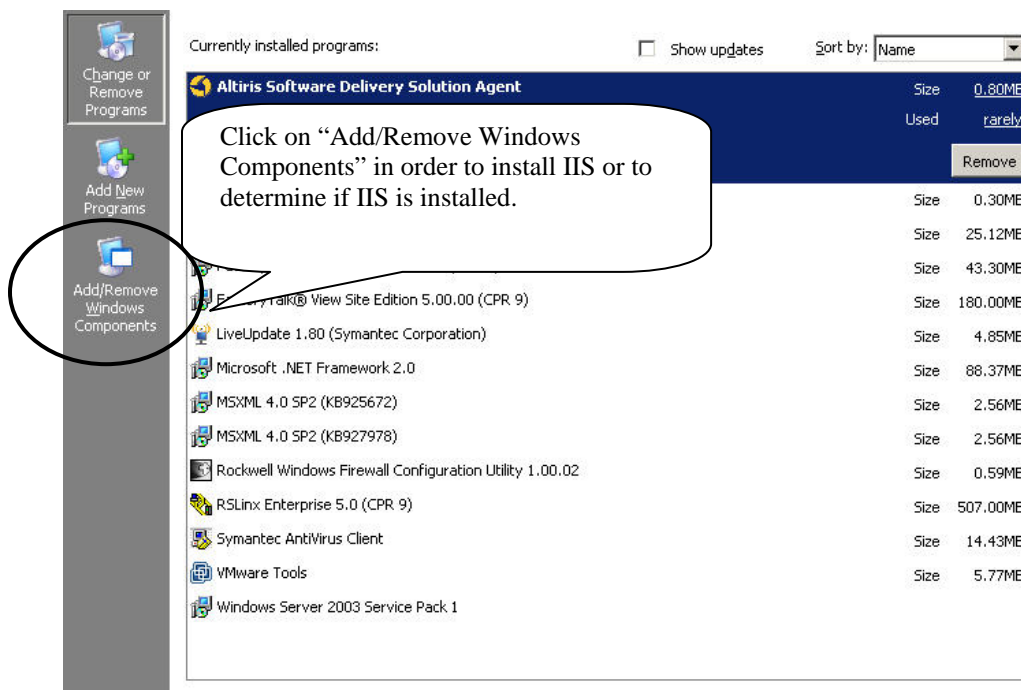

Figure 1 - Installing IIS Step 1

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[2] HMI Project open, close and project enumeration

Next, select "Add/Remove Windows Components". This will launch the Windows Components wizard as shown below in Figure 2. When this wizard is launched, you should see Internet Information Services, and if it is installed, the checkbox to the left should be checked.
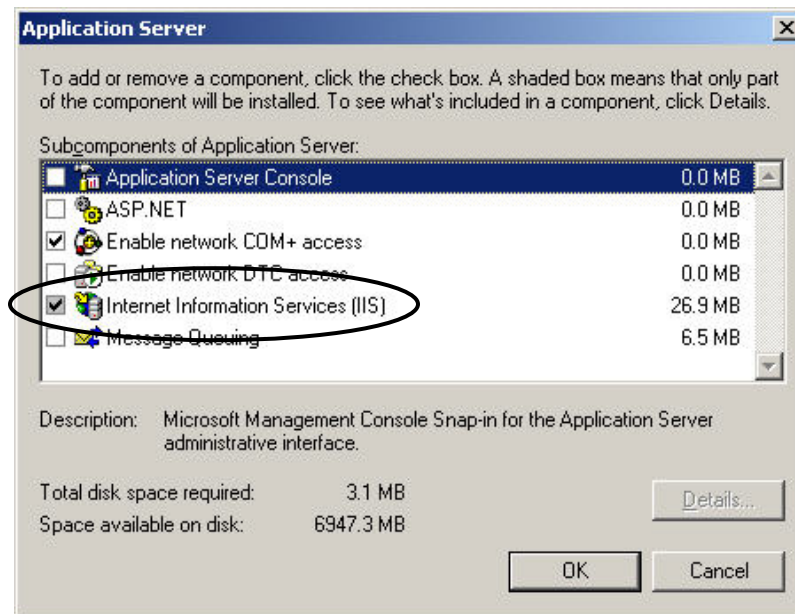
Figure 2 - Installing IIS Step 2 -Windows Component Wizard - IIS Should be checked

Note that the check-box for "Internet Information Services (IIS)" (in Figure 2) is grey, and that the "Details…" button is enabled. This means that IIS consists of several subcomponents that can be separately configured. If you click on the "Details…" button you will get the following screen, as shown in Figure 3.

Figure 3 - Installing IIS Step 3 - IIS Subcomponents Configuration

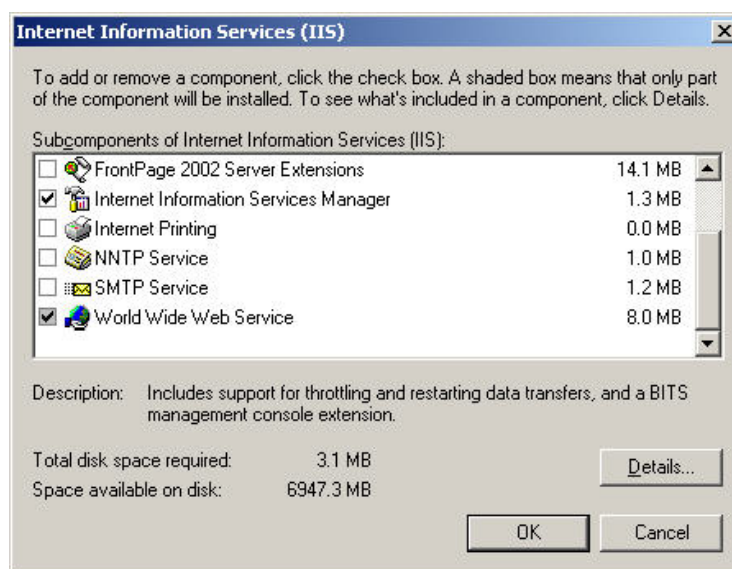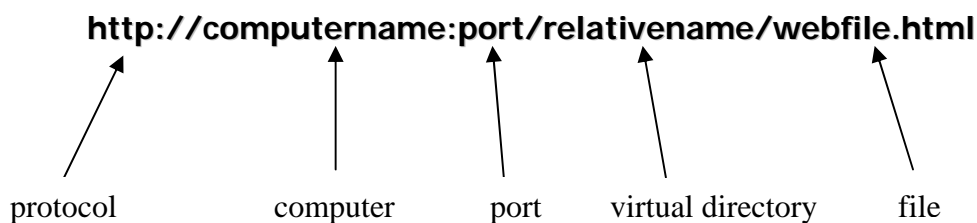It is important to note that only the checked items in Figure 3 are required for FactoryTalk View SE's default use of IIS. You do not require FTP or SMTP and you do not need FrontPage Server extensions. However, Active Server Pages may be required if using the Microsoft Web Browser ActiveX Control. Refer to Answer ID #30714 - Windows Server 2003 installation does not install all necessary IIS components by default for installation information.

If "Internet Information Services (IIS)" was not checked in the first place, this means IIS is not installed. Check the checkbox as shown in Figure 2 and click the Next button to install IIS. You will see some files being copied and the progress bar, and after a few moments, the wizard will tell you that IIS is installed. At this point you can close the "Windows Components Wizard", as well as the "Add or Remove Programs" Control Panel application.

IIS Virtual Directories

IIS's usual job is to serve websites. IIS can host multiple websites on the same physical server. When a user requests a website file from a web server, the format of the request is the familiar "URL". An URL takes the form:

http://computername:port/relativename/webfile.html

protocol   computer   port   virtual directory   file

The "protocol", "computer", and "file" are fairly self explanatory. The "port" refers to the TCP/IP port used by the particular website. HTTP's default port is port 80, and if the URL is using port 80, the ":port" part of the URL can actually be left out. In many cases you won't see the port in an URL.

However the "virtual directory" needs some discussion.

Essentially a virtual directory is a "root" or "directory" for a group of web resources (e.g. files) that are to be accessed via the same relative name as shown above. It is called a "virtual" directory because it is not exactly a physical directory in the "file system" sense of the word, but acts like one in terms of its ability to group resources together. This is how a web server allows many websites (which are just a number of web resources grouped under a virtual directory) to be served from the same physical server.

Now, in reality, a virtual directory must be "backed" by a physical directory, because all web resources are just files, and files need to be in directories in the file system. But do not equate a virtual directory to a physical directory, because they are different. For instance:

- A virtual directory can have a different name than the physical directory that backs it.

- A virtual directory name might be a very short, easy to remember word (like "RSViewSE"), but the physical directory backing it might be many levels deep in the file system.
- Virtual directories are often abbreviated as "VDIR". One can use the IIS Administration Tool, accessible from the Administrative Tasks in the Control Panel, to see all the virtual directories associated with a particular website.

  Note: In Windows 2000 and 2003 Server, it is possible to implement multiple web servers, each running off a different TCP/IP port. In this case, the "port" specifier described above would be required to be part of the URL for all web servers except the one running on port 80. The rules of virtual directories are still the same, however.

- Further, the files in the physical directories that back the Virtual Directories can have their access limited via NTFS file permissions. This is an important point and will be discussed later in this document.

Installation of FactoryTalk View SE HMI Server

During the install of the FactoryTalk View SE HMI Server the IIS entry point is defined. This entry point is the Virtual Directory and forms part of the web address used by Clients to access files and services on the server. The virtual directory is (as described above) called "**RSViewSE**" backed by a physical directory located at:

 C:\Documents and Settings\All Users\Documents\RSView Enterprise\SE\HMI Projects

This is the location of all of the HMI server specific files that are needed for the operation of the HMI Server application. This physical location can be modified and is documented in a Rockwell Automation Knowledgebase article[3].

Setup of FactoryTalk View SE Virtual Directories

Once the FactoryTalk View SE HMI Server installation has finished, the FactoryTalk View SE Web Components will be installed and the FactoryTalk View SE Virtual Directory will be set up. The following sequence of events occur when the FactoryTalk View SE HMI Server install is setting up IIS for use by FactoryTalk View SE:

1) **Determine the path of the "Common Documents"** – This is usually "…All Users\Documents…" as described in the above section, but since this path can be modified via registry settings, the FactoryTalk View SE Web Setup task must know for sure what the path is.

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[3] Answer ID #25424: How to redirect RSView application files to another drive or directory location

2) **Create the "RSView Enterprise Directory" and Subdirectories – if necessary** – The FactoryTalk View SE Web Setup task will create this directory and all subdirectories (e.g. … SE\HMIProjects…) if these directories don't already exist. If they do exist, then this step is bypassed.

3) **Modify NTFS permissions on RSView Enterprise Directory and Subdirectories –** The FactoryTalk View SE Web Setup task will modify the access permissions on this part of the directory tree to allow the "Internet Guest" Account read/write access to these (FactoryTalk View SE Specific) directories. This is so the IIS Anonymous user account can be used such that FactoryTalk View SE clients do not need special security rights[4]. Both read and write accesses are needed because both FactoryTalk View SE Display Client and FactoryTalk View Studio use IIS.

4) **Map the "…RSView Enterprise/SE/HMIProjects" physical directory to the "RSViewSE" virtual directory –** This step involves instructing IIS to create a virtual directory called "RSViewSE" and map it to the physical directory.

5) **Configure the Properties of the "RSViewSE" Virtual Directory –** This step configures the properties of the virtual directory[5]. Properties include:

   a. Allowing the Anonymous User read/write access.

   b. Allowing ASP scripts to execute server side.

   c. Allowing ISAPI Extensions to be cached in the IIS process.

   d. Making HMIServer.ASP the default document. This file produces the "RSView Enterprise HMI Server Status Page" that is accessible to ascertain if the IIS is working on an HMI Server (more on this later).

6) **Install the ISAPI & ASP Components** - In this step the FactoryTalk View Web Setup will install the following files into the root of the virtual directory.

   a. HMI_ISAPI.DLL – ISAPI Extension DLL

   b. CMD_ISAPI – ISAPI Extension DLL

   c. RSI.JPG, Cube.X – These provide the "Bouncing Cube" on the FactoryTalk View Enterprise HMI Server Status Page. Note this "Bouncing Cube" is non-functional on Windows 2003 Server Service Pack 1 and beyond, plus Windows XP Service Pack 2, due to the subsystem that generated the bouncing cube no longer being supported and removed from these operating systems. These components will be removed in later releases of FactoryTalk View Enterprise.

   d. HMIServer.ASP – this provides the "RSView Enterprise HMI Server Status" page.

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[4] This default configuration can be a security concern for some users who do not protect their networks behind a corporate firewall. See the last chapter "Using the FactoryTalk View SE Secure Web Site Setup Tool in CPR9" if you do not wish the Internet Guest Account/Anonymous user to have these NTFS permissions.

[5] Several of these properties will be discussed in more detail later in this document

Note: Neither files in c) or d) above are required for FactoryTalk View SE to properly function. They are for status indication and troubleshooting purposes only. The ISAPI DLLs described in a) and b) are vital however.

The following screen capture (Figure 4) shows the typical contents of the Physical Directory that is represented by the "RSViewSE" virtual directory:
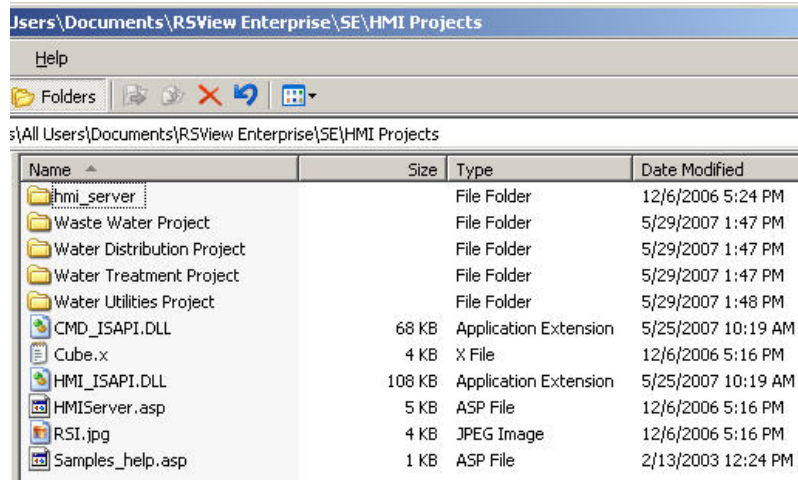

Figure 4 - Files and Sub-Directories of the "RSViewSE" Virtual Directory (Screen Capture Truncated for Space)
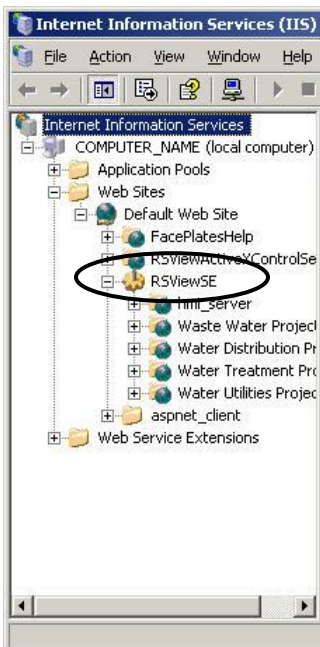

Figure 5 - IIS Administrative Console Showing the RSViewSE VDIR

In Figures 5 and 6, you will see screen captures from the **IIS Administrative Tool**, which can be launched from the Control Panel.

Go to Control Panel and select "Administrative Tools". Then select "Internet Information Services".

You will see a tool launched that looks like Figure 5. By expanding the default web site you can then see all the virtual directories.

The "RSViewSE" virtual directory is displayed as a node in the treeview. Subdirectories under this VDIR are the HMI projects used by the HMI Server.

You can right click on this and select "Properties" to see the configuration dialog, as shown in Figure 6.
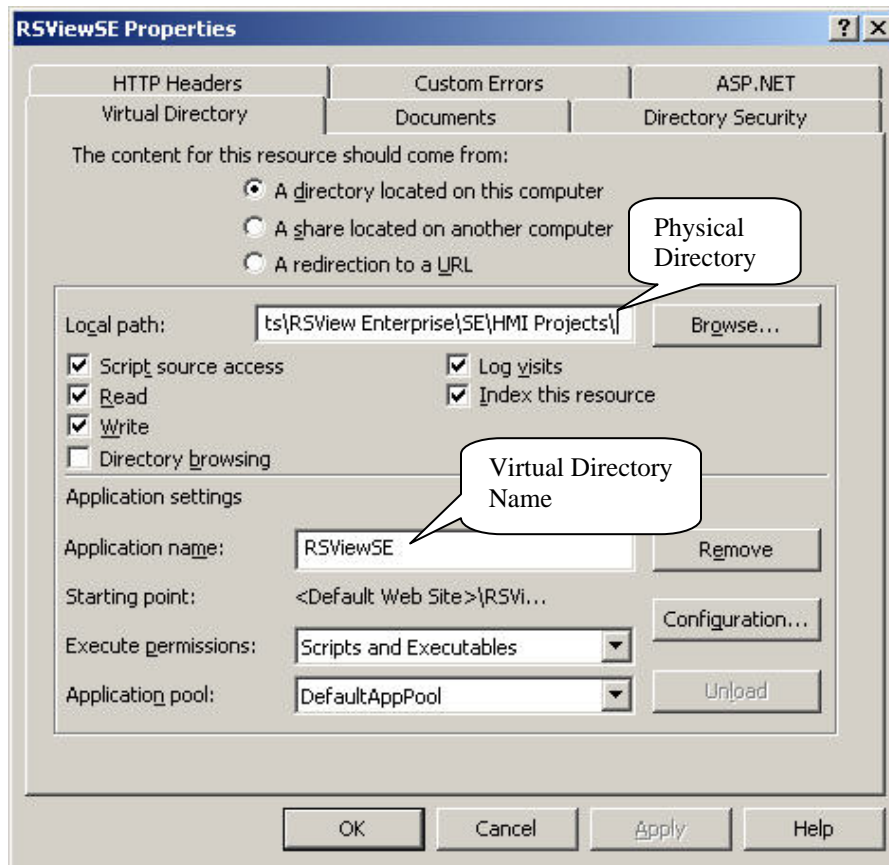
Figure 6 - RSViewSE Virtual Directory Dialog Page

Port Settings

A Web server used by FactoryTalk View SE must communicate via the HTTP protocol. This protocol communicates over TCP Port 80 which is the default port number for most Web servers. You can determine if your web server is using port 80 properly by launching the IIS Service manager, as follows.

A. **If using Windows Server 2000 or Windows Server 2003** – Port settings are found from the properties of the "Default Web Site". Right click on the default web server icon and select "Properties…" from the context menu. You will see a dialog box as shown in Figure 7 below.

B. **If using Windows XP** – Port settings are also found from the properties of the "Default Web Site" as in the case above. The only difference between Windows XP and the Server OS platforms is that the former only supports one Web Server whereas the latter supports multiple Web Servers.

In either case, you can check to be sure that your Default Web Site (and therefore the RSViewSE virtual directory) is using TCP port 80.
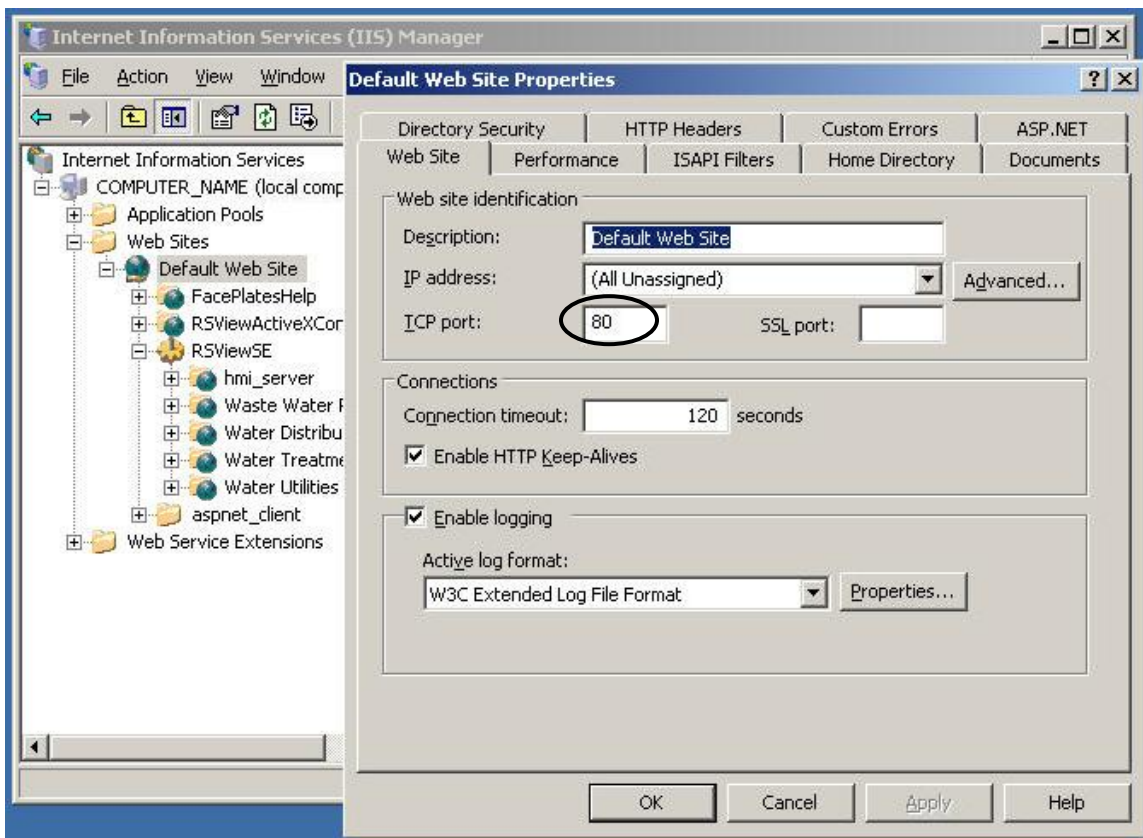
Figure 7 - Port Settings Dialog for Windows Server 2000 or 2003. Note the same approach is used for Windows XP as well.

Security and Authentication

Anonymous User

By default all actions on a Windows server must be done with a security context or a user. When an HTTP request is made to the IIS server, the default configuration is to use the Anonymous user which is defined as IUSR_COMPUTERNAME. This anonymous account does not have any rights on other computers and can only access items on the local machine.

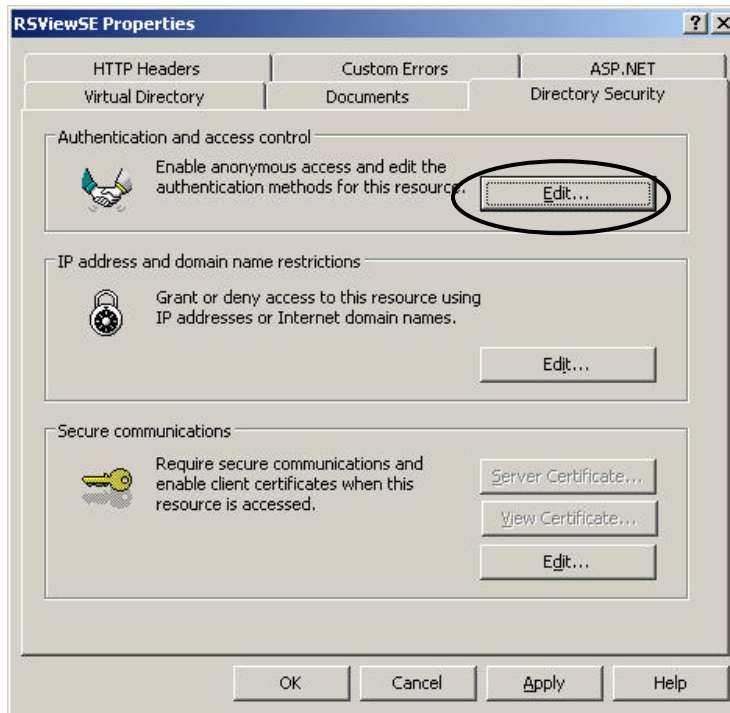Select the Directory Security Tab and the following dialog will be shown.

Figure 8 - Directory Security Tab of the RSViewSE Virtual Directory

As can be seen in the screen shot below (which is part of the IIS Admin Console), for a given virtual directory (e.g. RSViewSE), IIS allows the use of Anonymous access, authenticated access or both. By default, for most generic web sites, "Anonymous access" and "Integrated Windows Authentication" access is left checked. If for some reason the authentication of the anonymous user fails, then Integrated Windows Authentication will be requested from the client. Selecting only the Integrated Windows Authentication will cause IIS to use the credentials of the client's workstation. All tasks that IIS will do will be done under the context of the user credentials presented by the workstation. This can be confusing as the workstation user can be one person, say Bob, and the user that has logged in to FactoryTalk View SE is Sally. Bob's credentials would be used by IIS.

Figure 9 - Web Site Authentication methods

Internet Guest Account

The "Internet Guest" account is the user IUSR_COMPUTERNAME as described above. This is a special account which exists on all servers where IIS is installed. It is the user used when "Anonymous Access" is enabled. For FactoryTalk View SE use, Anonymous User is used and must have read/write access. This is to allow reading and writing of FactoryTalk View SE files that exist under the VDIR.

Other Features of IIS used by FactoryTalk View SE

ISAPI

ISAPI stands for Internet Services Application Programming Interface and is a way for software written by third party vendors (like Rockwell Automation) to interoperate with the features provided by IIS. In FactoryTalk View SE, ISAPI is used to allow client HTTP requests to be routed to the HMI Server subcomponents. There are two distinct uses:

1) Client requests for HMI Project items, file enumeration, open, close and create of HMI projects. These requests are routed through an ISAPI extension called HMI_ISAPI.DLL, which lives in the RSViewSE virtual directory.

2) Client requests for server commands. These requests are routed through an ISAPI extension called CMD_ISAPI.DLL, which lives in the RSViewSE virtual directory.

WebDav

WebDAV stands for **Web** – **D**istributed **A**uthoring and **V**ersioning. It is a set of extensions for the HTTP protocol and allows FactoryTalk View SE to get files (like Graphics Files, Parameter files, Macro files, etc.) with additional context with regards of the date and time they were last modified. This is especially useful to allow selective caching of Graphics files in FactoryTalk View SE Display Client – a big performance boost. Additionally, if a user in FactoryTalk View Studio modified a particular file, WebDAV would know this and the new file would be downloaded to the client, rather than the client using the cached file. So WebDAV permits optimal caching and updates of changed files.

WebDAV presents no additional challenges to the day to day use of FactoryTalk View SE, but it must be enabled. Earlier releases of Windows Server 2000 and 2003 had WebDAV turned off by default due to certain security exploits[6]. FactoryTalk View SE users need to turn WebDAV back on. Further, more recent releases of Windows Server 2003 have fixed the security issues, but WebDAV still needs to be explicitly enabled.
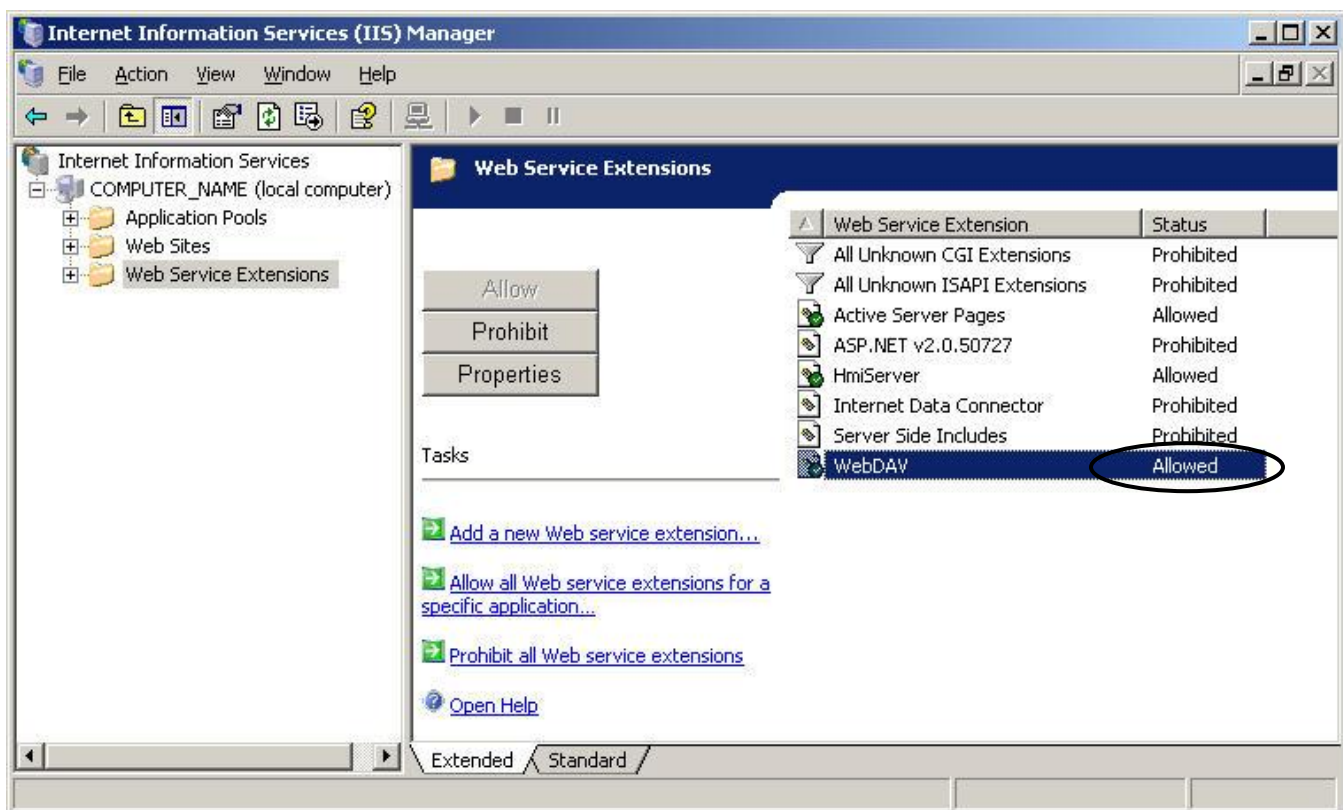

*Figure 10 - IIS Admin Console showing location of user interface for enabling WebDAV. **Note**: The settings shown in this diagram for other extensions are not representative of the settings for correct FactoryTalk View SE use - this diagram only relates to the use of WebDAV*

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[6] All of which have been patched by Microsoft in subsequent Service Packs

Troubleshooting FactoryTalk View SE and IIS

FactoryTalk View SE HMI Server Default Page

To test whether any content can be accessed from the RSViewSE virtual directory, you can attempt to access the RSView Enterprise HMI Server Status Page. You do this by bringing up your internet browser and typing in the URL:

http://<<computername>>/RSViewSE

where:

<<computername>> - is the name of the computer on which the HMI Server is installed. 'localhost' can be used if the user is working directly on the HMI Server computer.

If IIS and the RSViewSE virtual directory are working properly, you should get back a page that looks like Figure 11.
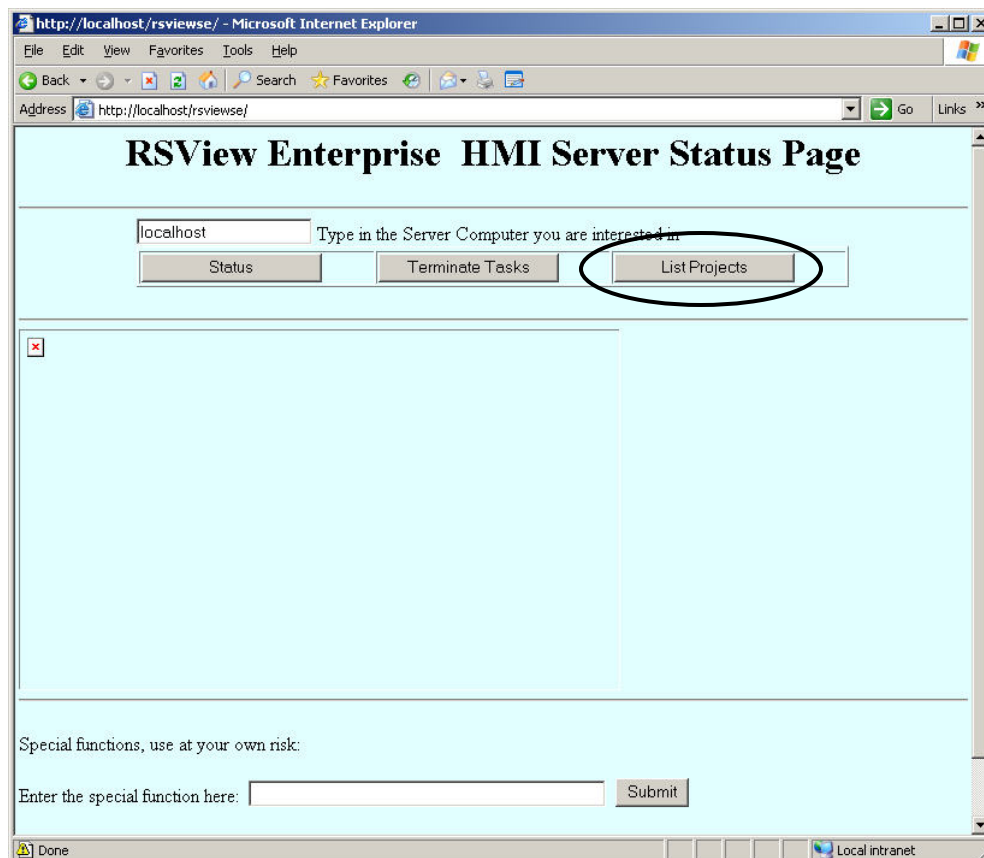

Figure 11 - FactoryTalk View Enterprise HMI Server Default Page

Note that there are some buttons and other user interfaces on this page. They are not of any use to the end user with the exception of the "List Projects" button, which is discussed next.

Testing ISAPI Services Health

As stated earlier in this document, FactoryTalk View SE makes use of ISAPI Web Technology for various functions. If the ISAPI Web Interface stops working, then FactoryTalk View SE will lose functionality. To test that ISAPI is working nominally, bring up the RSView Enterprise HMI Server Status Page, as discussed in the previous section. Then click on the "List Projects" button. This will exercise the ISAPI interface by issuing a "list projects" command. If the ISAPI interface is working properly you will get a list of HMI Projects stored on the HMI Server as shown below in Figure 12.

Figure 12 - ISAPI Server Test Operation what you should see if ISAPI is working properly

The list of HMI Projects shown is typical – in this case it is a list of sample HMI Projects shipped with FactoryTalk View SE. In your case you will see the HMI Projects that have been created on your HMI server.

IIS Logging

IIS allows logging of all calls made to it. This can be useful for troubleshooting and determining the clients that have connected to the HMI server. By default IIS Logging should be set to "on", and extended properties should be set. The location of the log files can be modified and consideration should be taken when reconfiguring this location. Some considerations include information about the user names that have visited the site. By default this location is under the system32 folder and requires authenticated privileges to access this folder. The following screen shot (Figure 13) shows the properties of the default web site and highlights the log properties.
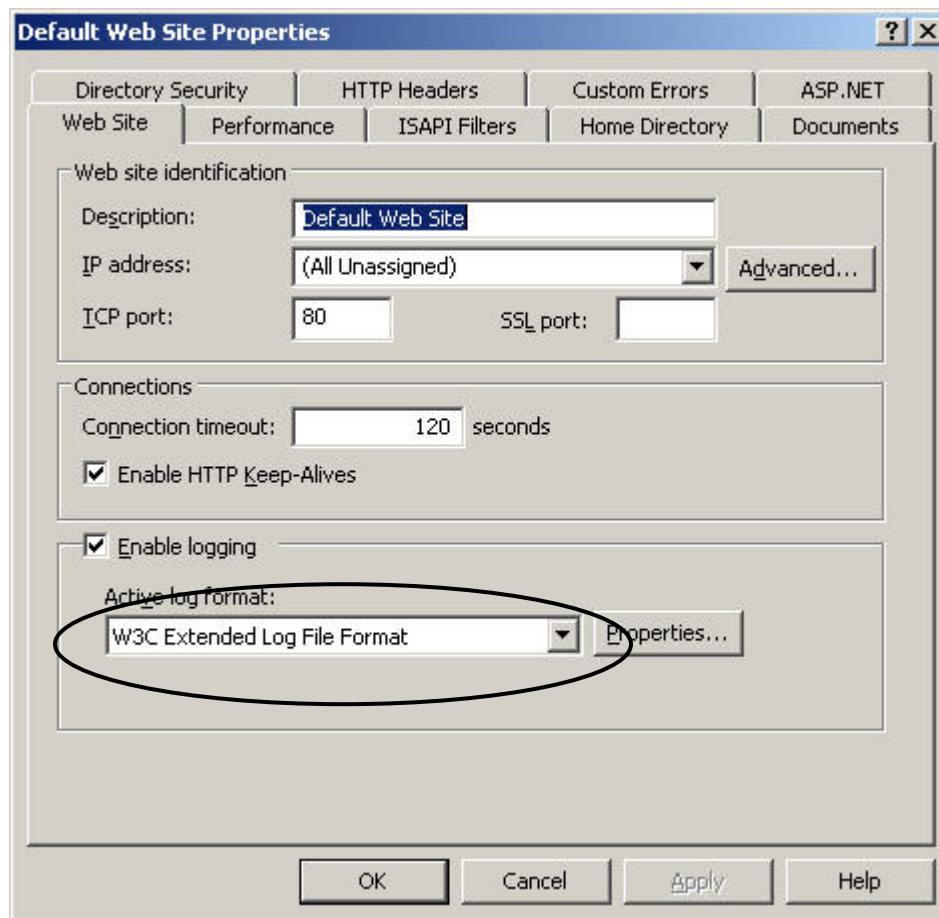
Figure 13 - Dialog for setting IIS logging options

Note that the configuration of Logging is done from the Root Web, in this case the Default Web Site. Further, the "Properties" button brings up a dialog with a long list of options as shown below in Figure 14. As with any log file that is associated with a service, performance of the server can be an issue.

Depending on the use of IIS on the server, performance monitor should be used to determine the effect additional logging may have on the server. In addition, a new log file is created each day and over time, the number of files in this directory can be large. In order to save resources, it is suggested that a scheduled task be created to delete or backup the aged file after a predetermined amount of time.

When properties are selected the following dialog (Figure 14) is displayed. By default the log times and the rollover are based on GMT. The highlighted check box can provide some convenience as the times can be based on local time. The location of the log file can be modified here as well, note the considerations of relocation.
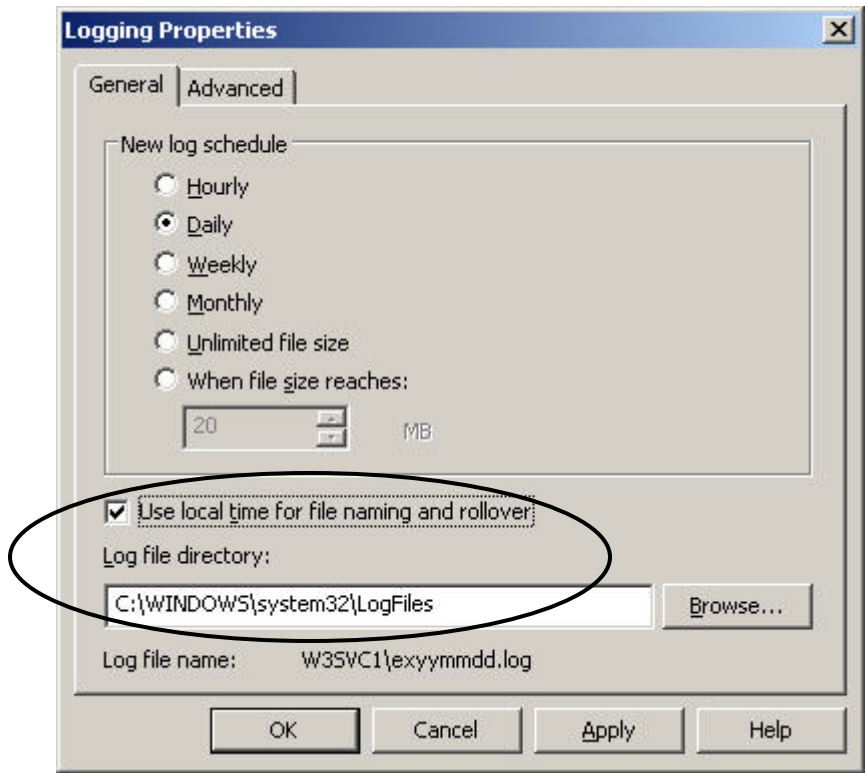

Figure 14 - IIS Extended Logging Properties

When using the Extended Properties tab the following dialog (Figure 15) is shown. This is where the items being logged can be defined. Items of interest here are the user name and the client IP address.
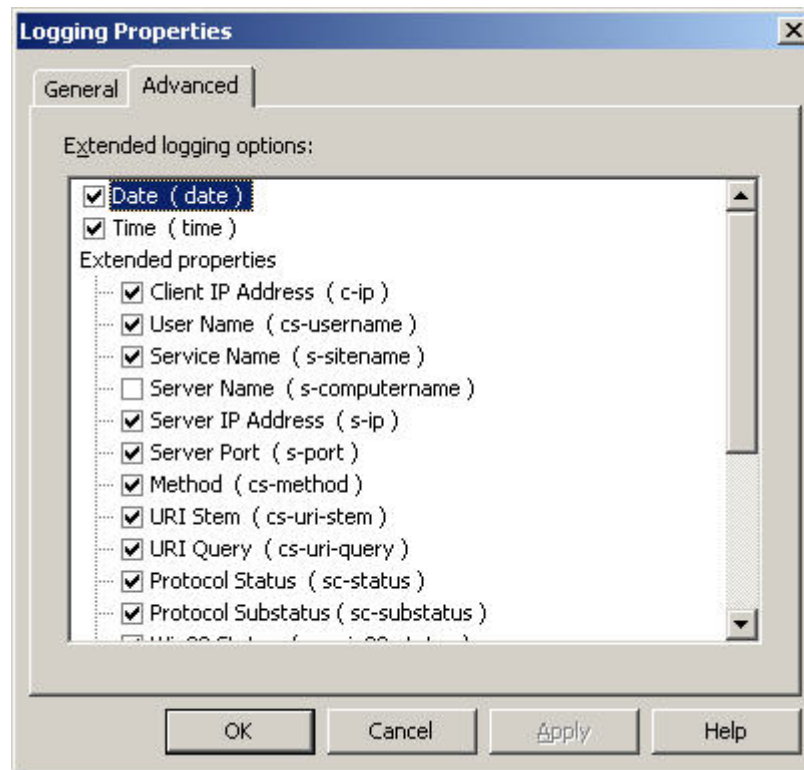

Figure 15 - IIS Log Extended Properties

As can be seen in the following example of an IIS log, the username (ENTZ02\RAE97278) on client IP of 10.78.27.5 and the HMI server name (ENTZHMI001) shows an HTTP return code of 304. This is a 'not modified' html return code which informs the client that the version of the supervisorselection.gfx file on the client is valid and does not need to be downloaded again.

```
2004-04-02 21:09:03 10.78.27.5 ENTZ02\RAE97278 W3SVC1 ENTZHMI001 10.78.23.135 80 GET
/rsviewse/hmiperfplc5only/gfx/supervisorselection.gfx - 304 0 579 5178 0 HTTP/1.1 ENTZHMI001 View+Studio
- -
```

The most important parameter of the log record is the HTTP return code, as described above. Some typical return codes are as follows:

- **200 – Everything is OK** and request was completed – you see this most often
- **201 – Everything worked OK**, but this is the first time this file has been requested by the client – you might see this when FactoryTalk View SE is first used

- **304 – Not modified.** Everything is OK. No transmission is required from server to client, so client uses cached copy – you will also see this often

- **400 – ERROR - Bad Request**. Since FactoryTalk View SE is creating all requests programmatically, and testing them in code to validate them, you shouldn't see these errors.

- **401 – ERROR Access Denied**. This means that IIS Security is not set up appropriately, and perhaps Anonymous User is not enabled. Sometimes you might see 401, 200 in pairs. This means that Anonymous User is not set up and the System is using Windows Integrated Authentication. FactoryTalk View SE "could" work continuously without issue in this mode, but it is not the intended setting[7]. You need to re-enable Anonymous User, so you only see 200's not pairs of 401,200. NB: IIS Lockdown tool

- **403 – ERROR Access Forbidden**. This usually means that the NTFS file permissions for the requested file do not match the rights of the requesting user. Since FactoryTalk View SE is using Anonymous access, the Anonymous user must have read/write access in the physical subdirectory referenced by the RSViewSE virtual directory, as well as all subdirectories. Since this is set during installation of FactoryTalk View SE HMI Server web extensions, it usually means these settings have changed (somehow) in the interim.

- **404 – ERROR Not Found**. This means that the requested file does not exist on the FactoryTalk View SE HMI Server. Perhaps you deleted a graphics file and an FactoryTalk View SE Client is still attempting to use it.

- **500, 501, 502, and 503 – ERROR Server Error** – This means that either IIS is broken, or one of the FactoryTalk View SE components that interoperate with IIS is broken or hung or has crashed. Your best bet is to reboot the HMI Server. This will solve the problem in over 75% of cases. If the problem persists you may need to contact Tech Support.

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[7] The FactoryTalk View SE Secure Web Site Tool is a supported feature in CPR9 that allows the system to use Windows Integrated Authentication. By using this tool to implement, you can safely turn off the Anonymous User.

Using the FactoryTalk View SE Secure Web Site Setup Tool in CPR9

The FactoryTalk View SE Secure Web Site tool is used to configure IIS (Internet Information Services) so that it is more secure with respect to its use with a FactoryTalk View SE (Network) application. There are two functions that the tool performs - it creates a new secure web site where the FactoryTalk View SE Server program will run and it allows this secure web site to be enabled or disabled.

Secure web sites can not be created on Windows XP or Windows 2000 computers. A Windows 2000 Server or Windows 2003 Server computer must be used.

Installation

The tool is installed with FactoryTalk View Enterprise v5.00 (CPR9).

Access Permissions

In order for a user to be able to access this tool, they will need permissions to do so. This is configured under the Product Policies of FactoryTalk View SE.

1) Under System > Policies > Product Policies > FactoryTalk View SE, double click on Feature Security to launch the Properties window.
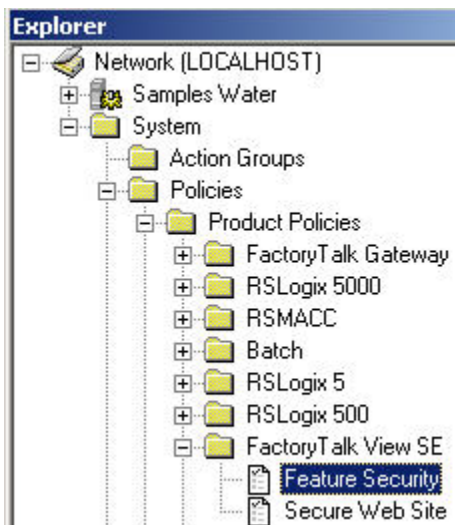
2) Click on the ellipses (...) button to launch the Configure Securable Action window where permissions can be added or removed as well as users or groups.
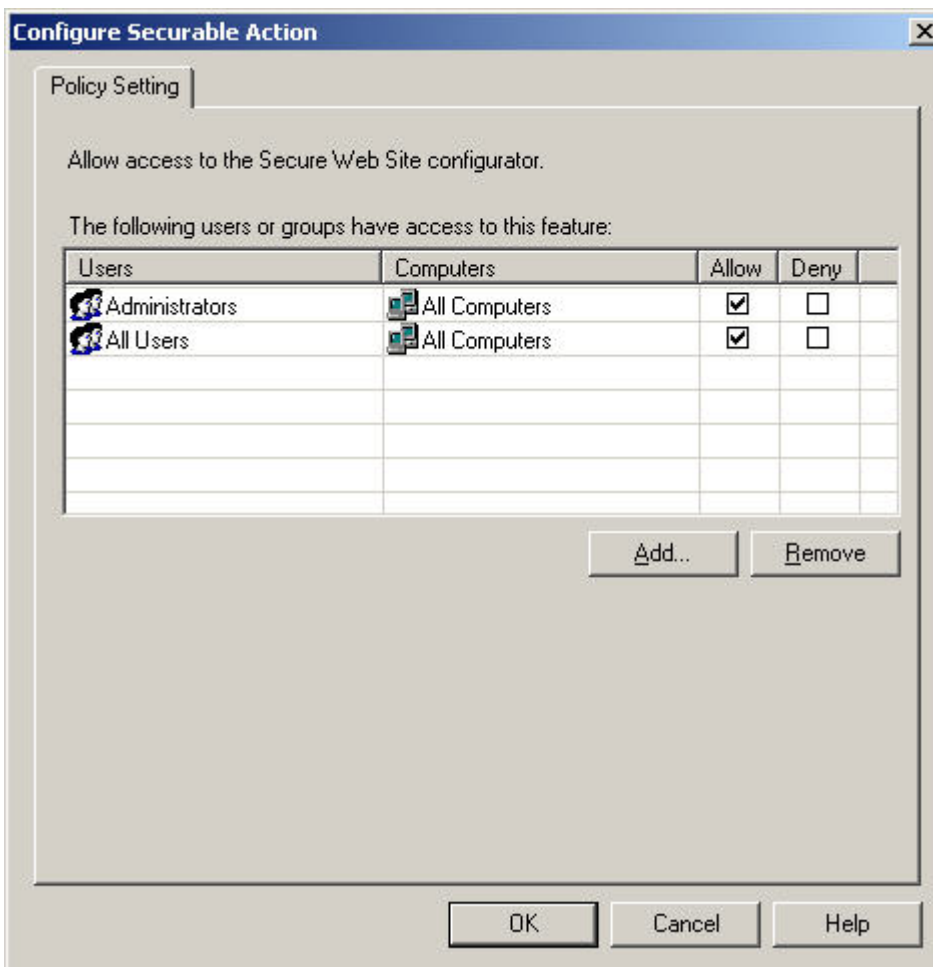
Configuration

The tool is separated into two sections: General Settings and Settings for Local Computer. Every computer that hosts an HMI Server will need to run this tool locally.

The tool is launched from Start > All Programs > Rockwell Software > FactoryTalk View > Tools > FactoryTalk View SE Secure Web Site Setup.

General Settings

The changes made here allow a user to Enable or Disable the use of all the FactoryTalk View SE secure web sites connected to the FactoryTalk Network Directory. Since these settings are FactoryTalk Directory-wide, pressing the Enable button from any computer accessing the FactoryTalk Directory will allow clients to start using the new secure web site. This should be done after each of the HMI Servers has a local web site created. If any clients are connected during the time when the web site is enabled, they will need to be restarted.

Settings for Local Computer

Each computer hosting an HMI Server will need to have a local secure web site created. This new secure web site will run the FactoryTalk View SE Server program which is normally ran by the Default Web Site.

The status provides a means of determining whether or not the web site has already been created. If the status is Not Created, a click of the 'Create Web Site' button will create the new FactoryTalk View SE secure web site on that computer.

Properties of the Secure Web Site
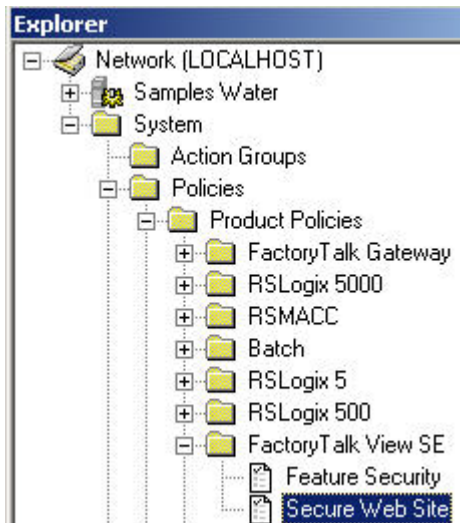
The properties of the Secure Web Site can be viewed by double clicking on:

> Product Policies\FactoryTalk View SE\Secure Web Site
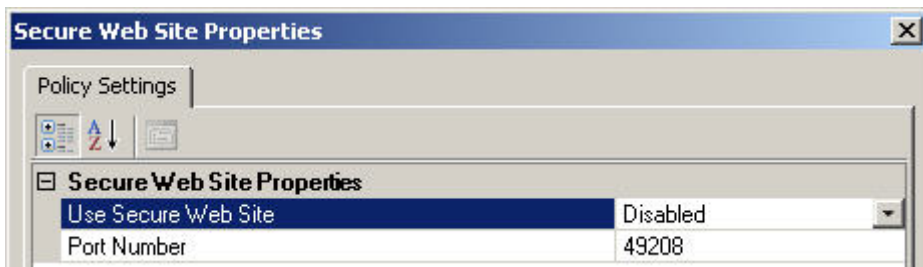
The Port Number setting is a private TCP port number that the secure web site uses so that it is more secure that the default web site since it would no longer use the default of port 80.

Frequently Asked Questions

How do I install IIS?

First you should determine if it is already installed. This is the subject of the next question. If you are certain that IIS is not installed, then you need to launch the Windows Control Panel and launch the "Add/Remove Programs" task. From that point, follow the direction of the section in this document entitled "Installation of IIS".

How can I tell if IIS is installed on my PC?

You need to launch the Windows Control Panel and launch the "Add/Remove Programs" task. From there, click the "Add/Remove Windows Components" button. This will launch a dialog box showing the list of installed windows "components". You should see the item "Internet Information Services IIS" and it should be checked. If it is not checked, check it; this will cause IIS to be installed.

What is the purpose of IIS? Why is it a requirement?

FactoryTalk View SE is a distributed system and allows remote clients to connect to servers placed anywhere in your network. It is also a multi-user system and many dozens of clients (including FactoryTalk View Studio clients) can connect to a given HMI Server. We use the DCOM protocol for much of our distributed connectivity needs, but it is often a problematic protocol to use and is overkill for many tasks. So we have tried to reduce the use of DCOM only to subsystems that really need it. For other remote connectivity needs we have chosen HTTP (HyperText Transport Protocol) because it is lightweight, scalable, and it meets our needs. It is used successfully in millions of software applications – it is the ubiquitous protocol of the Internet. Since the FactoryTalk View SE HMI Server is a Windows-based system running on a Windows Server (or XP), we have chosen a Windows based HTTP server, which is IIS.

Does IIS have to be installed on all PC's in the FactoryTalk View SE Architecture?

For FactoryTalk View SE Enterprise there are Clients and Servers. If a computer is strictly a Client (e.g. the Server is not running on the same physical machine as the client) there is no need to have IIS installed on the client. IIS is required on all HMI Servers.

Due to the fact that IIS is used to reduce the number of remote calls using DCOM and FactoryTalk View SE Standalone applications do not use DCOM for these tasks, IIS is not a requirement for FactoryTalk View SE Standalone applications.

With an FactoryTalk View SE HMI server PC and a remote client setup, why would the URL "http:\\servername" reflect the default Microsoft web page on the server PC, but display a diagnostic noting "Page under construction" on the remote PC when the URL "http:\\servername" is used in IE's URL remotely?

Well, first off, the fact that you are getting the "Under Construction" message means that IIS is working properly. All this message really means is that the "root" site on the HMI Server does not yet have any content. This message comes up by default after a fresh IIS install, and will stay there until somebody adds some content to the "root" site. The RSViewSE Virtual Directory is at the location "http://servername/RSViewSE" and will work correctly regardless of whether the root directory is "under construction" or not.

With an FactoryTalk View SE HMI server PC and a remote client setup, why would the SE "bouncing cube of life" reflect well on the remote client, in IE's URL, yet still cause the client to spur "Cannot Connect to Server in Area ..Etc..." on the remote client? In this case can we safely rule out IIS shortcomings?

If the "bouncing cube of life" shows up it means that the RSViewSE virtual directory is working properly under IIS. It does not necessarily mean that HMI server (as a whole) is healthy, but it does mean that IIS is functioning properly. To test the HMI server operation you can try the tests outlined in the "Testing ISAPI Services Health" section of this document. The message "Cannot connect to Server in Area" rarely has anything to do with IIS itself (especially if the bouncing cube is showing). A special note to HMI Servers running Windows Server 2003 Service Pack 1 and beyond or Windows XP Service Pack 2 – the subsystem used to generate the bouncing cube is no longer supported and is actually removed from the OS. So the bouncing cube will no longer show up on this platform. However, you should still see the RSView Enterprise HMI Server Status Page (See Figure 11 – FactoryTalk View Enterprise HMI Server Default Page).

We have a SE Client wire framing failure when using Windows 2000 clients. We are using FactoryTalk View SE HMI server PC (XP or Windows 2003) plus remote client setup with (Windows 2000) on the clients (note XP works OK). We note that graphics reflect successfully but fail to show any data, i.e. wireframe. Can this be attributed to IIS shortcomings?

IIS (and FactoryTalk View SE Server's use of it) is not responsible for delivery of FactoryTalk Live Data. Wire framing is almost 100% due to the inability of Live Data to be delivered to the Graphics Display. Wire framing is complex issue and arises due to a number of root causes, but IIS is not one of them.

Is there a definitive document that notes how the Virtual Directory, Documents, Directory Security, & HTTP Headers need be configured to successfully publish from an SE server to clients? Are these properties are found in the Internet Information Services under PCName->Web Sites->Default Web Site->RSViewSE (Right mouse click to properties).?

The answer to the first part of the question is that the definitive document on these topics is the document you are reading! The answer to the second part of the questions is yes. The IIS Admin console is the place to go to see and configure all of IIS settings, as well as FactoryTalk View SE HMI Server's use of IIS.

Additional Reference Links

FactoryTalk

- AID 29189 - FactoryTalk Automation Platform 1.08.00 Patch TOC
- AID 32382 - FactoryTalk Automation Platform 2.00.00 (CPR7) Patch TOC

FactoryTalk View SE

- RSView Supervisory Edition Install Guide
  http://literature.rockwellautomation.com/idc/groups/literature/documents/in/viewse-in003_-en-p.pdf
- RSView Supervisory Edition User's Guide Volume 1
  http://literature.rockwellautomation.com/idc/groups/literature/documents/um/viewse-um004_-en-e.pdf
- RSView Supervisory Edition User's Guide Volume 2
  http://literature.rockwellautomation.com/idc/groups/literature/documents/um/viewse-um005_-en-e.pdf
- AID 29184 - RSView SE 3.20.00 Patch TOC
- AID 32380 - RSView SE 4.00.00 Patch TOC
- AID 37110 - RSView SE Tips and Best Practices TOC
- AID 20450 - RSView SE Operating System and Service Pack compatibility
- AID 27105 - RSView SE Server Redundancy Guidelines
- AID 23120 - Applying RSView SE in a 21 CFR Part 11 environment
- AID 30714 - Windows Server 2003 installation does not install all necessary IIS components by default
- AID 39431 - Common Recommended Settings and Considerations for a FactoryTalk View SE Distributed (RSView SE) and RSView32 Active Display Systems

Communications

- AID 22199 - RSLinx Classic Service Pack/Hotfix TOC
- AID 32383 - RSLinx Enterprise 4.00 Patch TOC
- AID 29191 - RSLinx Enterprise 3.00 Patch TOC

General

- Rockwell Automation Knowledgebase
  http://www.rockwellautomation.com/knowledgebase/
- Additional Rockwell Automation online manuals
  http://literature.rockwellautomation.com/idc/groups/public/documents/webassets/browse_category.hcst