TIFF Pilot For ASP.Net
Reference Guide Version 3.0

CONTENTS

1   INTRODUCTION

Tiff Pilot provides dynamic TIFF to PDF conversion, allowing a web site or intranet to convert TIFF files to PDF format "On The Fly". In addition the product can process TIFF images stored in a SQL Server database, as well as in regular files.

1.1   Server Requirements

- IIS 5.0 under Windows XP, IIS 6.0 under Windows 2003, IIS 7.0 under Vista/Windows 2008
- Version 2.0 of the .Net Framework
- Adobe Reader 5.0 or later is recommended

1.2   Supported TIFF File Formats

- CCITT Group 3 (1-D), Group 3 (2-D)
- CCITT Group 4
- CCITT RLE
- Uncompressed (Bitonal)
- JPEG Compression ("Type 6")
- LZW

1.3   Licensing

The software requires the user of a licence key file (key.txt in the Tiffpilot\bin directory). The licence file is used to determine whether the software is a trial version or for permanent keys which version of the software has been licensed. The downloaded product includes a trial license which has no time limit, but all document pages are stamped. To see information relating to the product version and licence file, see the "Version Information" section of the test.aspx test page.

2   INSTALLING ON IIS 5 (WINDOWS XP PROFESSIONAL)

2.1   System Requirements

- Version 2.0 of the .Net Framework
- IIS with ASP.Net

2.2   Step 1

Unzip the Archive to the install location. This may be under C:\tiffpilot or another location of your choice.

2.3   Step 2

Run **install.wsf**. This registers required DLLs and installs additional run time DLLs.

2.4   Step 3 - Create and Configure The Virtual Directory using IIS manager.
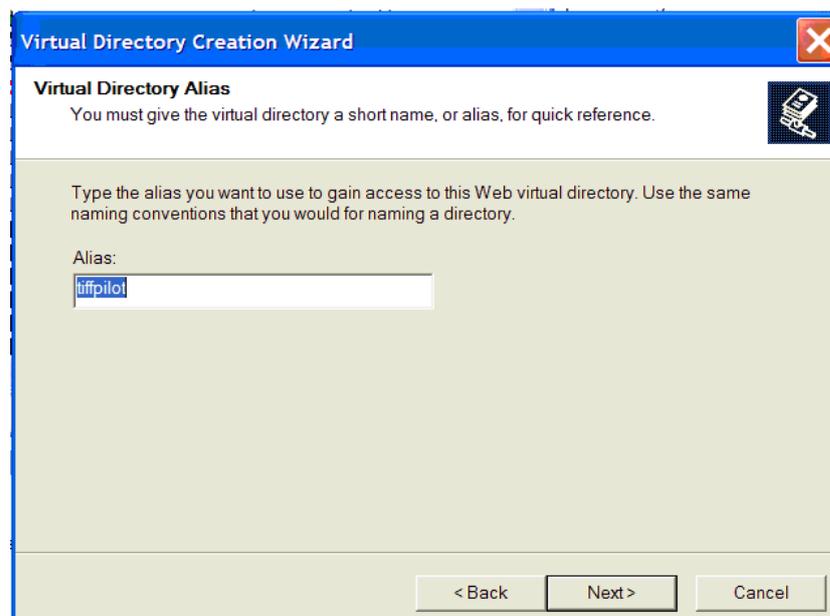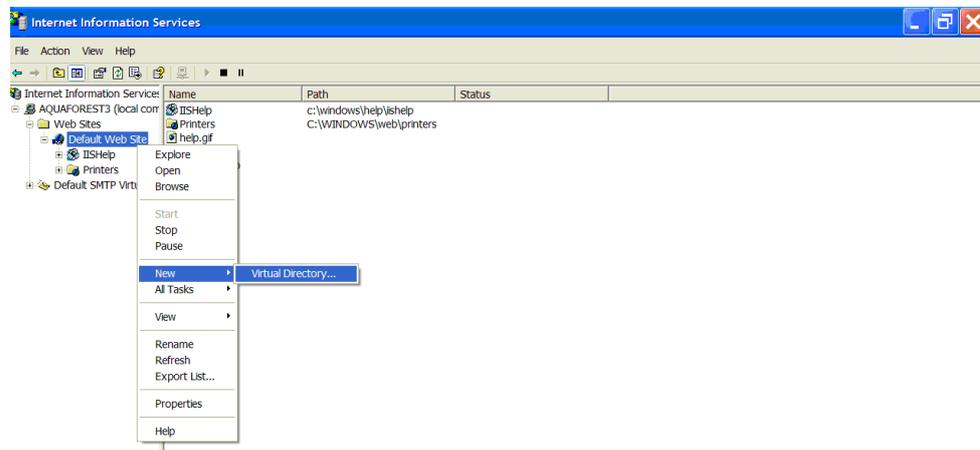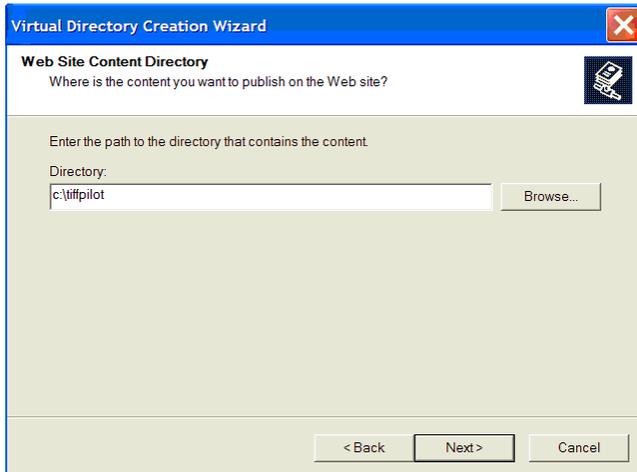
The virtual directory needs Script and Execute permission :
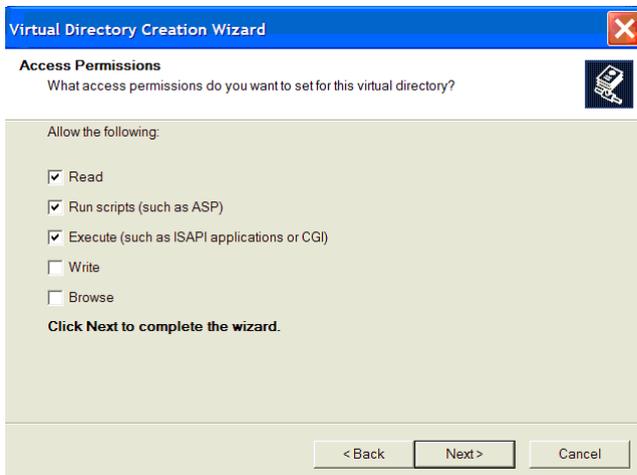
In order to ensure that TIFF Pilot can write to the log or audit files and access other installation files it should be configured to either use Integrated Windows authentication or anonymous access with a suitably privileged UID.
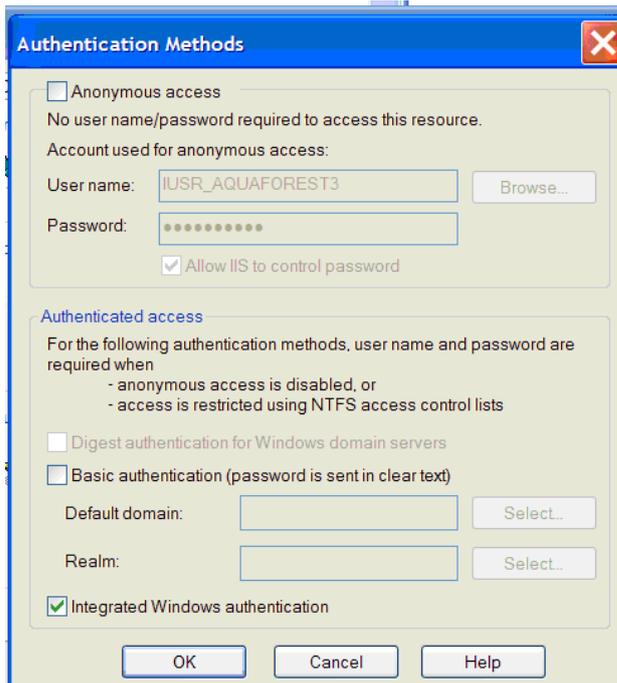
2.5 Step 4 – Test The Installation

Test the installation using http://server/tiffpilot/tpstart.aspx
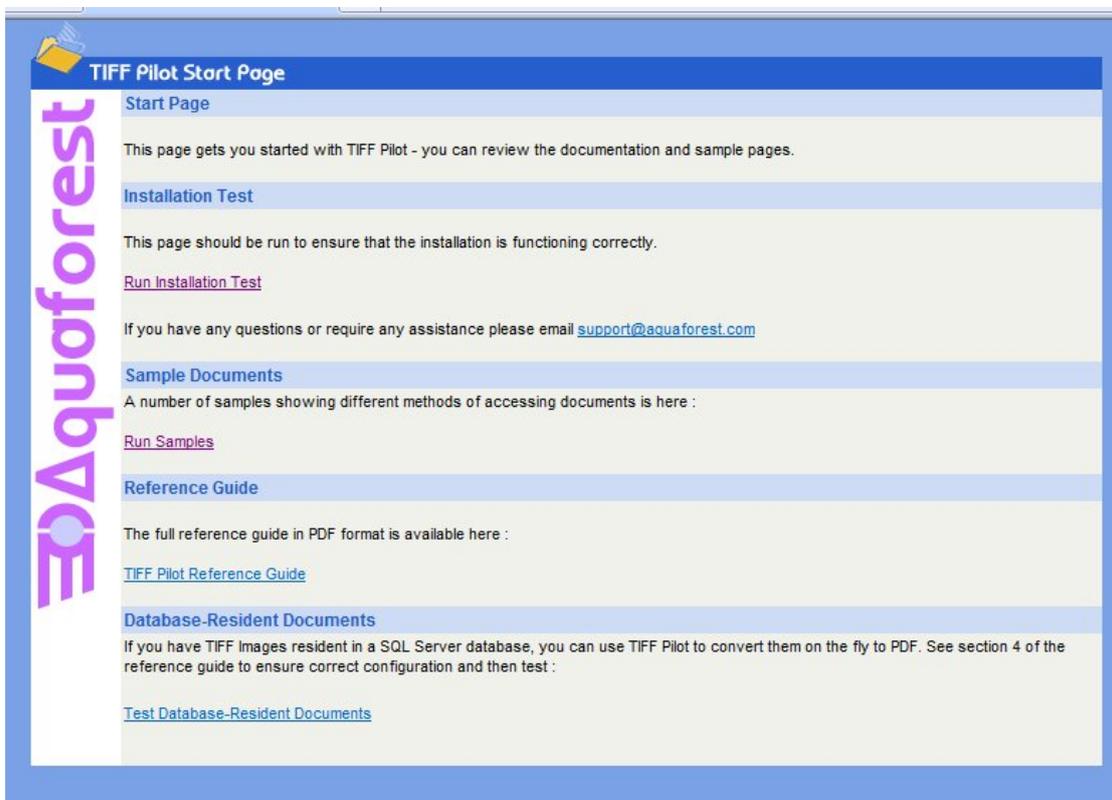
3 INSTALLING ON IIS 6 (WINDOWS 2003)

3.1 System Requirements

- Version 2.0 of the .Net Framework
- IIS with ASP.Net

3.2 Step 1

Unzip the Archive to the install location. This may be under C:\Inetpub\wwwroot\tiffpilot or another location of your choice.

3.3 Step 2

Run **install.wsf**. This registers required DLLs and installs additional run time DLLs.

3.4 Step 3 - Create and Configure The Virtual Directory using IIS manager.

Create and Configure The Virtual Directory using IIS manager.
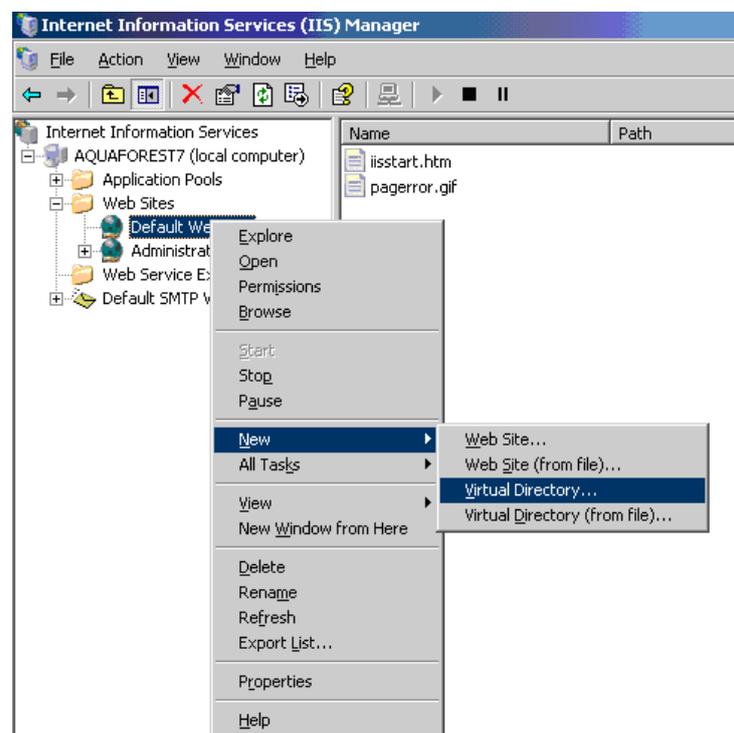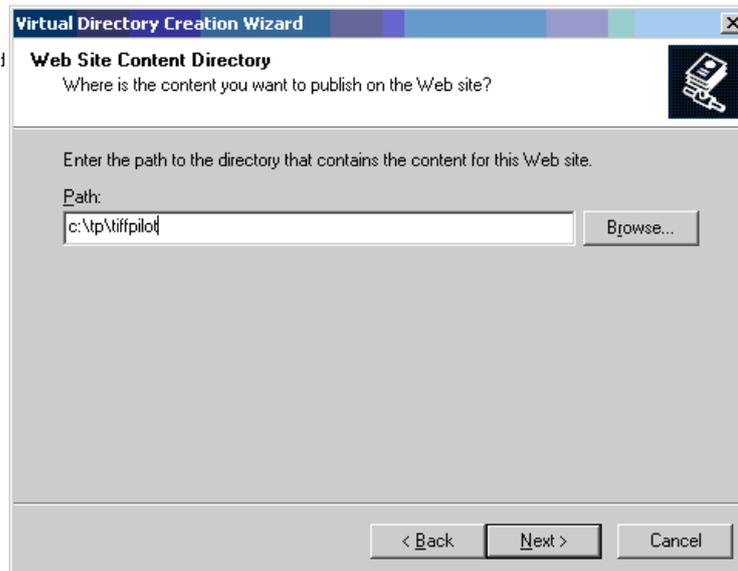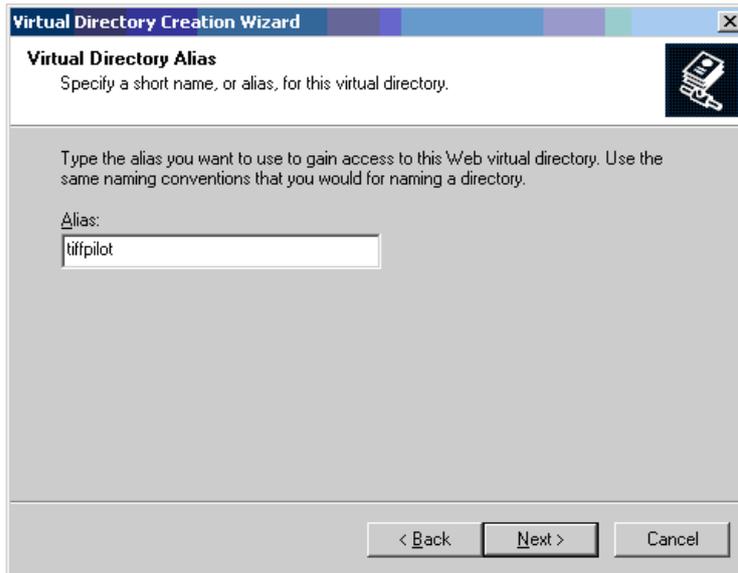
The virtual directory needs Script and Execute permission :
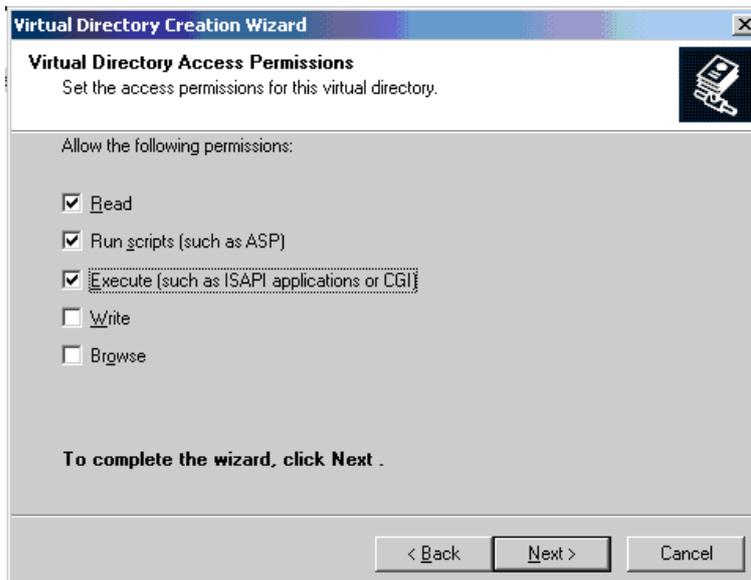
Ensure that the Application is configured to use ASP.Net 2.0
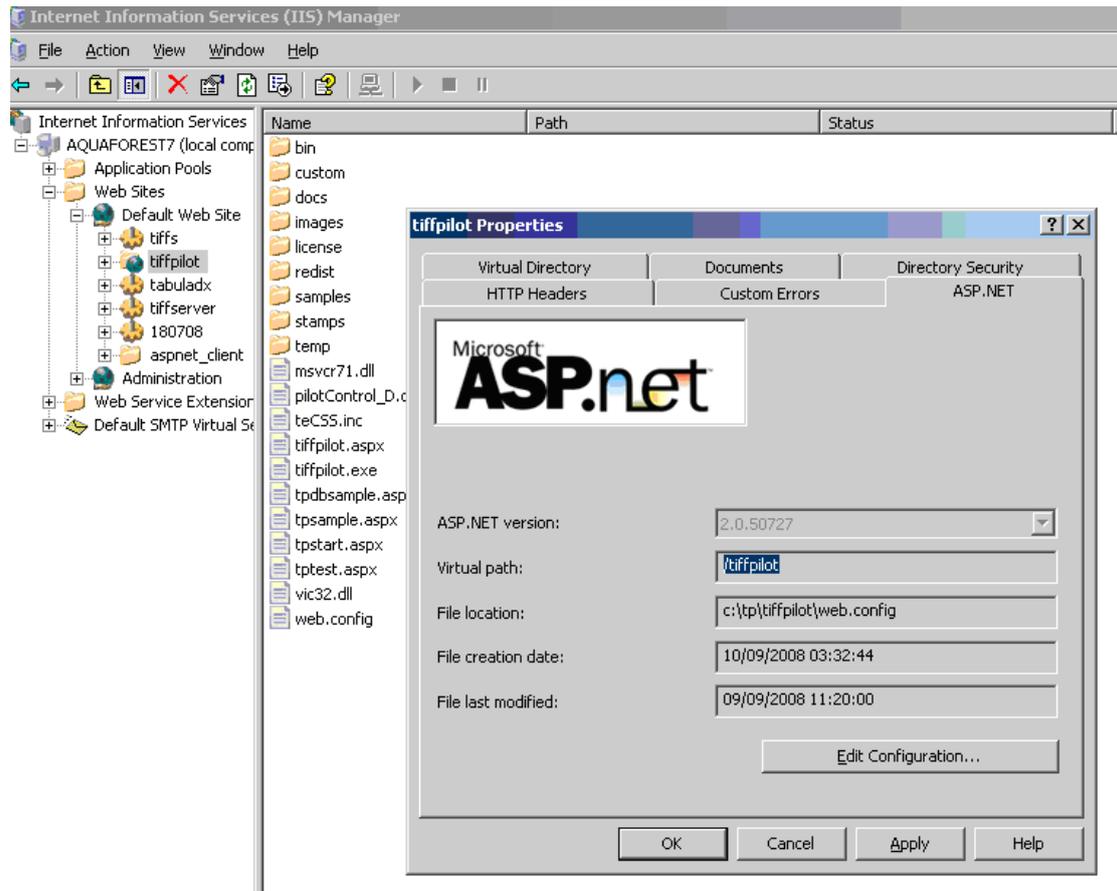
In order to ensure that TIFF Pilot can write to the log or audit files and access other installation files it should be configured to either use Integrated Windows authentication or anonymous access with a suitably privileged UID.
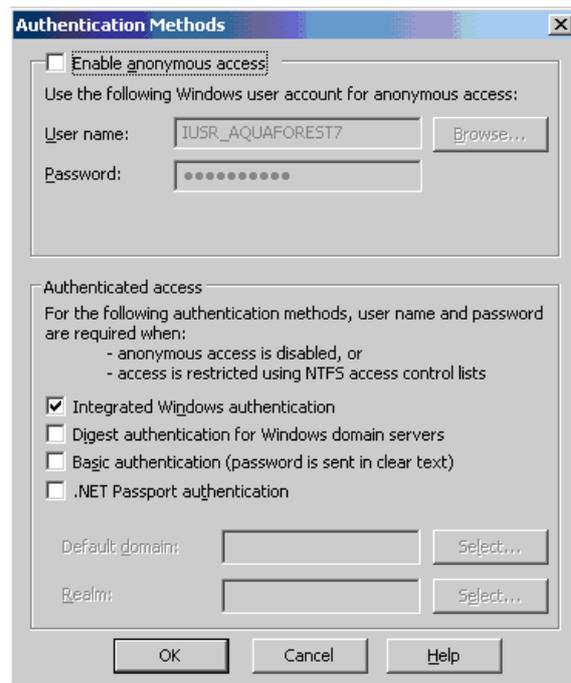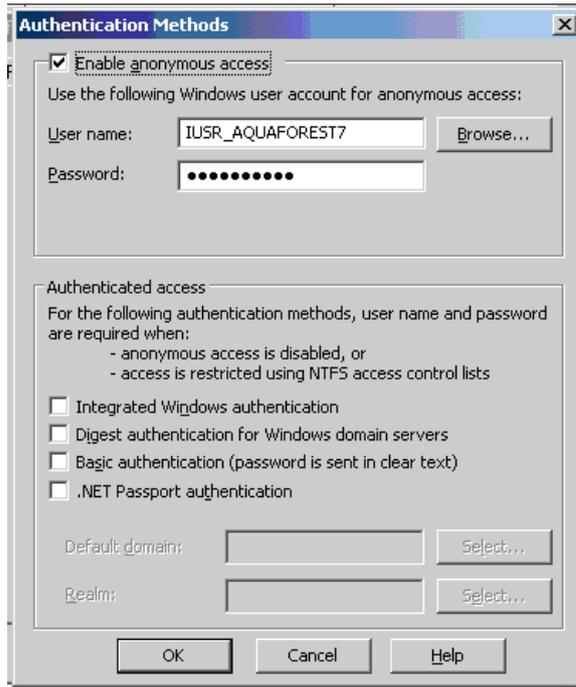
3.5 Step 4 - Add the Web Service Extension

Add [Installfolder]\tiffpilot.exe as an allowed web service extension.

3.6   Step 5 – Test The Installation

Test the installation using http://server/tiffpilot/tpstart.aspx

4 INSTALLING ON IIS 7 (WINDOWS 2008, WINDOWS VISTA)

4.1 System Requirements

- Version 2.0 of the .Net Framework
- IIS with ASP.Net

4.2 Step 1

Unzip the Archive to the install location. This may be under C:\Inetpub\wwwroot\tiffpilot or another location of your choice.

4.3 Step 2

Run **install.wsf**. This registers required DLLs and installs additional run time DLLs.

### 4.4 Step 3 - Create and Configure The Virtual Directory using IIS manager.

Create and Configure The Application Directory using IIS manager ensuring that the Classic .NET App Pool is chosen.
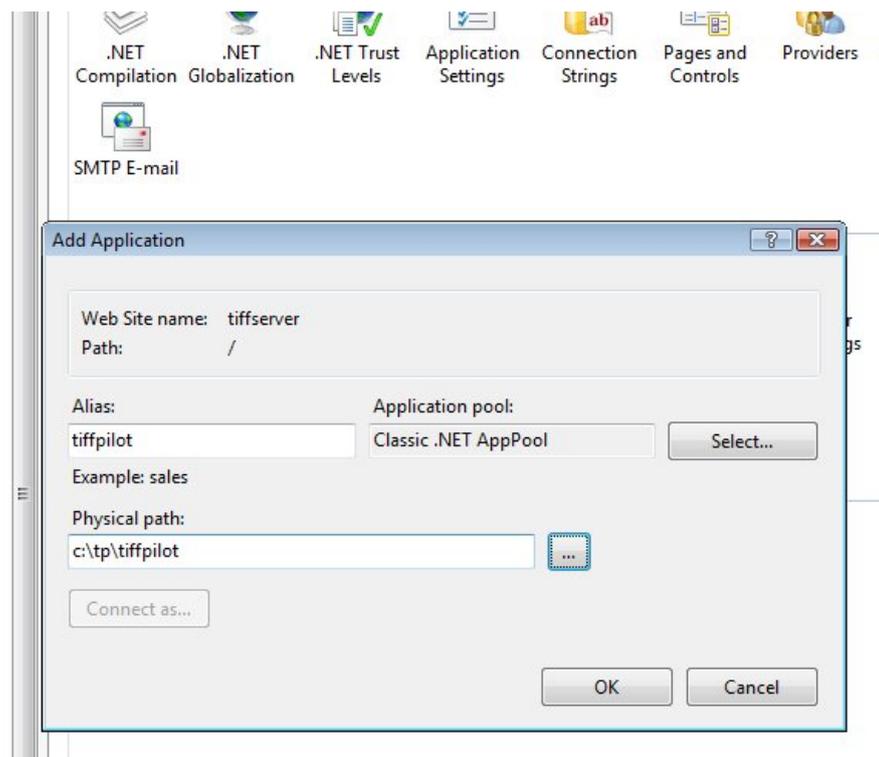
If the files were unzipped under C:\Inetpub\wwwroot, the "Convert to Application" option can be used instead.
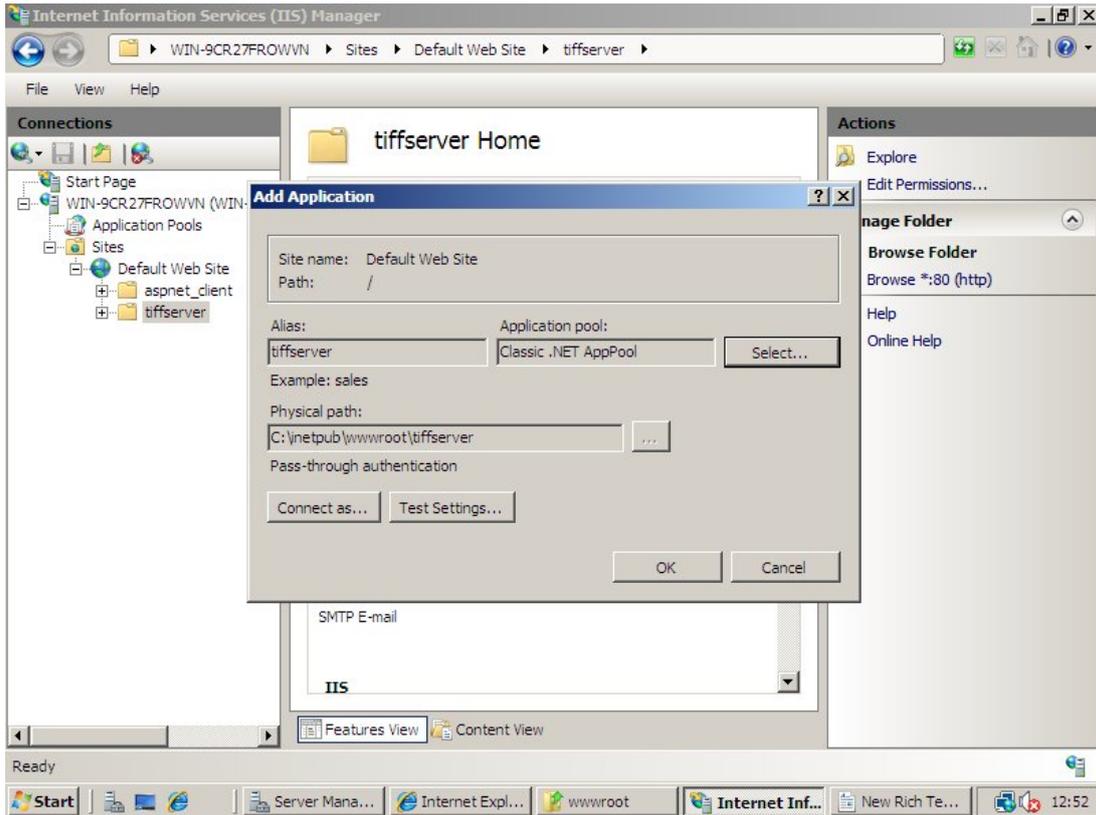
Depending upon the files that TIFF Pilot is required to access, it may be necessary to configure either Integrated Windows authentication or anonymous access with a suitably privileged UID.
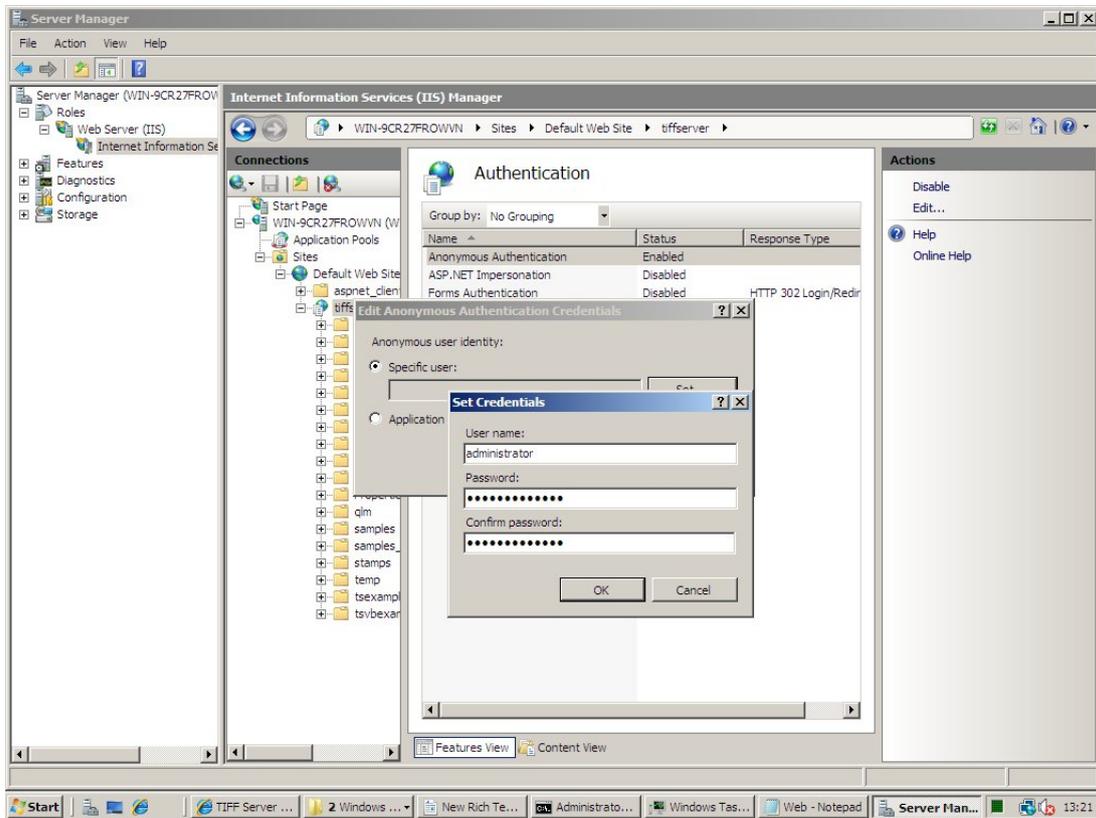
4.5 Step 4 - Add the Web Service Extension

Add [Installfolder]\tiffpilot.exe as an allowed web service extension. If CGI has been enabled on the server already, all that is required is to add tiffpilot.exe to the list of allowed executables under the "ISAPI and CGI Restrictions" section at the server level.
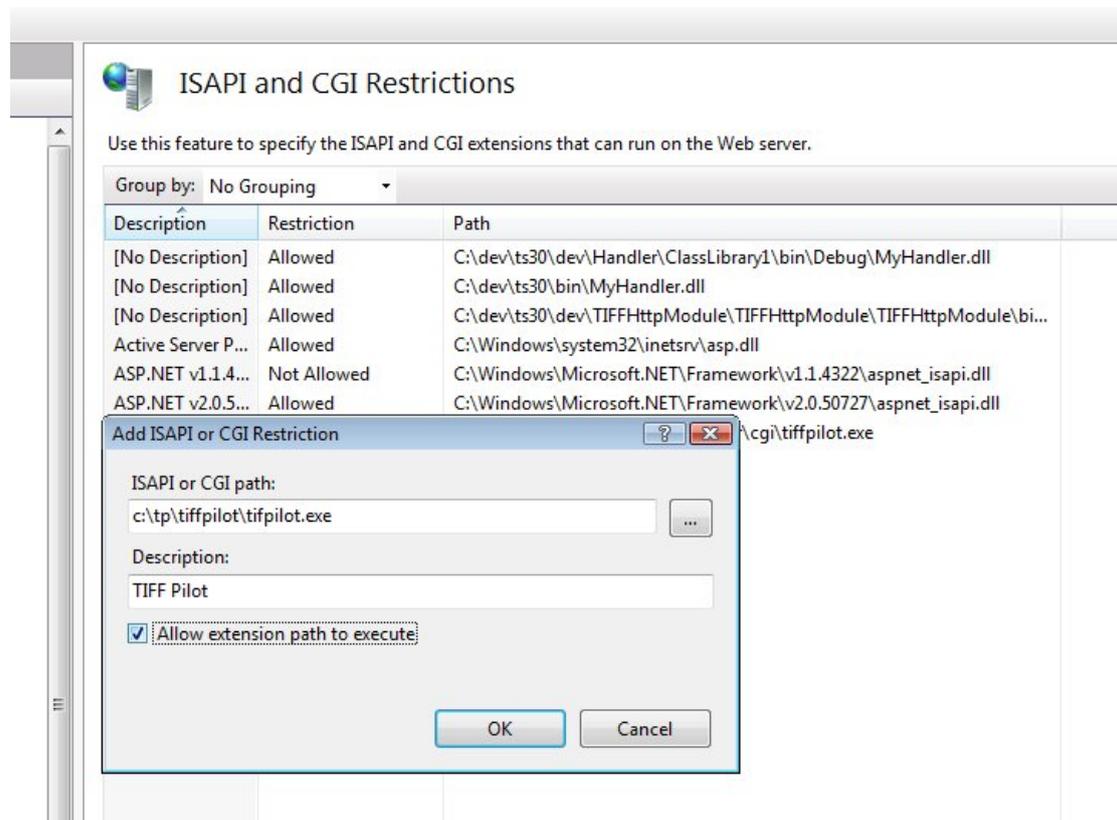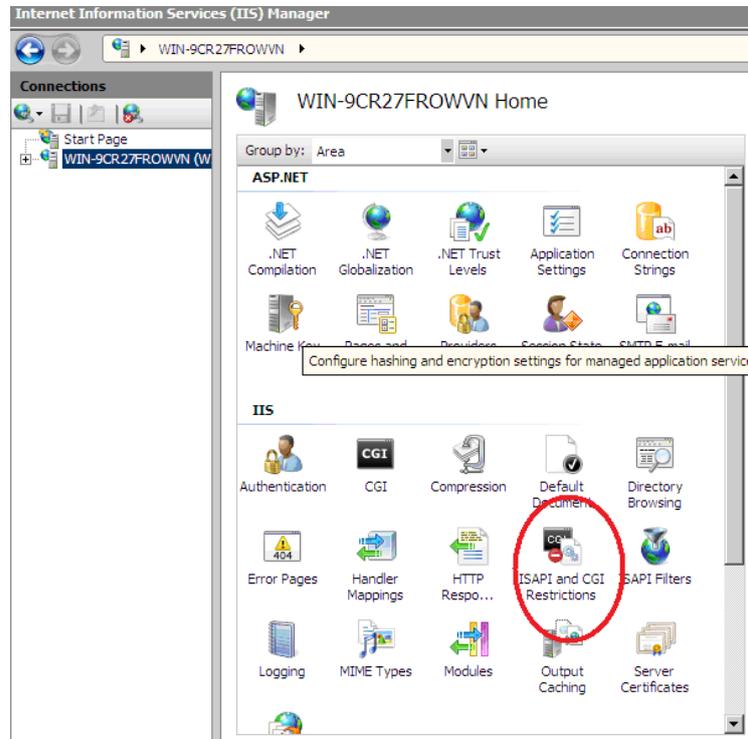
If the "ISAPI and CGI Restrictions" icon does not appear, you need to ensure that CGI is enabled on the server. This involves adding the CGI component of IIS via "Turn Windows Features On of Off" or "Manager Server Roles", and then enabling of the CGI handler mapping.

4.6   Step 5 – Test The Installation
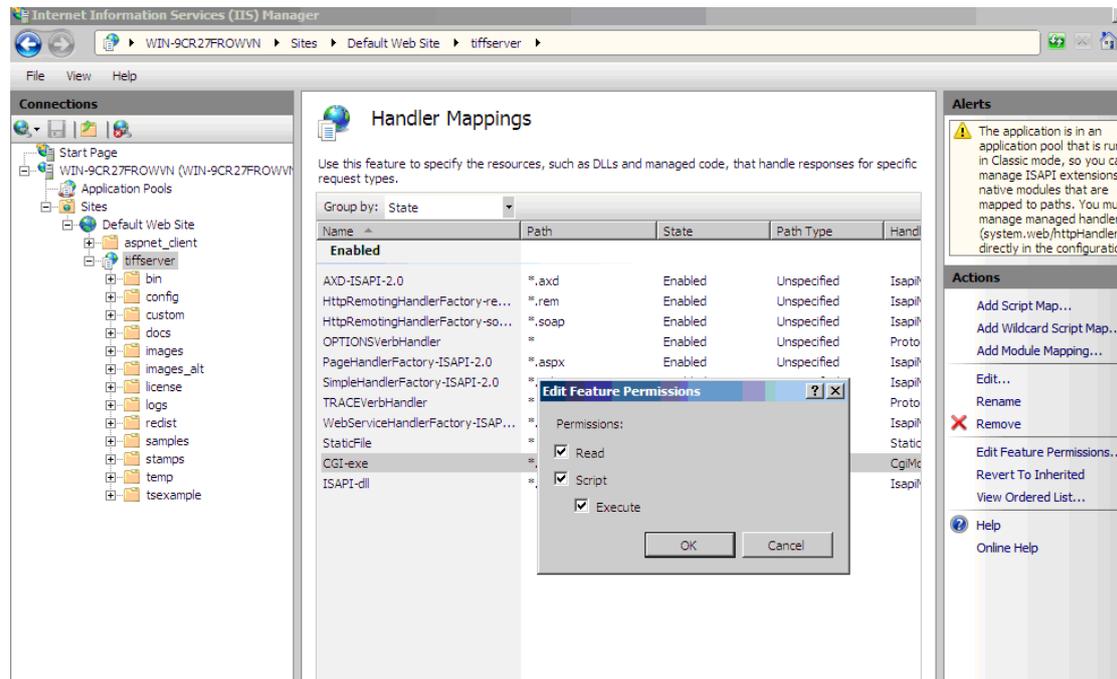
Test the installation using http://server/tiffpilot/tpstart.aspx
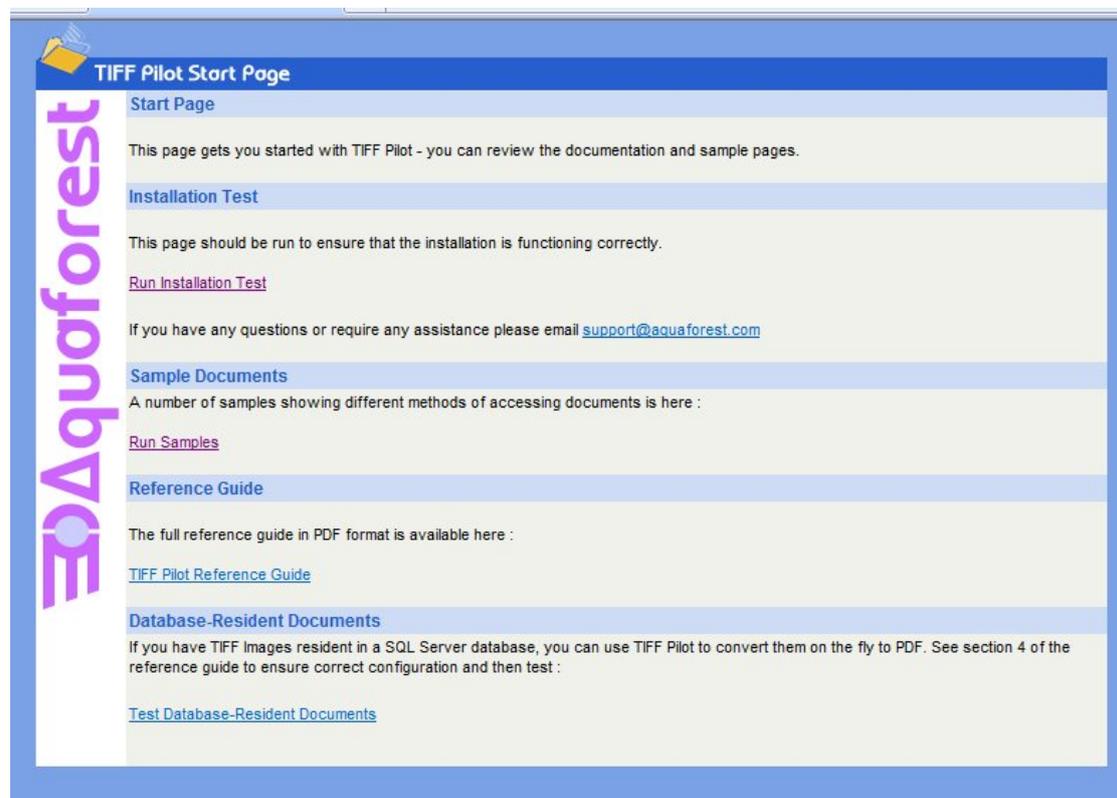
5 ACCESSING DOCUMENTS

Tiff pilot supports the concepts of defining documents for display in a variety of ways.

5.1 Accessing Documents via Paths or UNCs

A single document may be accessed using Paths or UNCs with the at_url parameter. Where a path is used, this must be a path recognized on the machine where Tiff pilot is installed.

http://localhost/tiffpilot/tiffpilot.aspx?FN=C:\images\doc1.tif

5.2 Accessing Documents on Remote File systems

This can be achieved by either of the following methods. In the example a remote server DOCSTORE has a share called images. There can be security issues relating to remote file access –see below.

Using a UNC :
http://localhost/tiffpilot/tiffpilot.aspx?FN=\\DOCSTORE\images\doc.tif

5.2.1 Related Security Issues

Use of the product to access files residing on network drives may require a minor adjustment of IIS security parameters, as the default security model (IIS running as IUSR_ServerName) will not enable IIS to invoke programs (such as the Tiff Image Server) to access remote files.

The simplest solution to this issue is to set the security properties of the following file using the IIS administration tool.

tiffpilot.aspx
tiffpilot.exe

To do this, navigate down to the Tiff Pilot directory in the IIS administration tool. Right click on the file(s) that you need to change. Choose Properties | File Security |Edit. You can set Anonymous Access and specify an appropriately empowered domain user and password as the account that will be used to execute tiffpilot.exe and tiffpilot.aspx.

If your security model mandates an alternative approach, the principle still applies that quatiff.exe and aquatiffpdf.exe must be run under an account with sufficient privilege.

5.3 Accessing Documents via URLs

This can be done by using XML virtual documents (see 5.6).

5.4 Directory Documents

Tiff pilot allows multiple *single page* TIFF files to be merged on the fly into a single document. The at_url parameter should specify a directory which contains a set of TIFF files (most commonly an ordered set of single page tiff files). Pages will be ordered in windows sort order.

UNC Example
http://localhost/tiffpilot/tiffpilot.aspx?FN=\\DOCSTORE\images\directory1234

5.5 Compound Documents

A set of single-page TIFF documents (that may or may not be in the same directory) may be specified. Along with the page ordering by using a compound document which requires the use of an XML virtual document. A brief example is shown below & Section 3.6 goes into detail :

http://localhost/dev/ts2/tiffpilot.aspx?FN=C:\tiffpilot\samples\d3.xml&VD=path

Where the contents of vd3.xml may be :

```
<?xml version="1.0" encoding="ISO8859-1" ?>
<ts_vdoc>
<ts_vdoc_type>multifile</ts_vdoc_type>
<ts_vdoc_url>samples/single_page_tiffs/p1_split_ab.tif</ts_vdoc_url>
<ts_vdoc_url>samples/single_page_tiffs/p1_split_ac.tif</ts_vdoc_url>
<ts_vdoc_url>samples/single_page_tiffs/p1_split_ad.tif</ts_vdoc_url>
</ts_vdoc>
```

5.6 XML Virtual Documents

All of the types of document definitions in 5.1 through 5.6 may be specified through the use of an XML virtual document. Each document will have a structure as follows

```
<?xml version="1.0" encoding="ISO8859-1" ?>
<ts_vdoc>
<ts_vdoc_type>document type</ts_vdoc_type>
        document specifications
</ts_vdoc>
```

5.6.1 document type

Where document type is one of the following :

ts_vdoc value	Description
file	A single document file
directory	A single directory document
multidoc	An ordered set of documents
multifile	An ordered set of single path TIFF files

5.6.2 document specifications

Files are specified using either URLs such as

```
<ts_vdoc_url>samples/ccitt.tif</ts_vdoc_url>
```

Or Paths/UNCs such as

```
<ts_vdoc_path>\\YOUR-447023AE6B\IMAGES\directory1234\ccitt.tif</ts_vdoc_path>
```

5.6.3 Referring to XML Virtual Documents :

The FN parameters may be used to refer to the XML file and the VD parameter should be set as shown.

http://localhost/dev/ts2/tiffpilot.aspx?FN=c:\samples\vd3.xml&VD=path

5.6.4   Examples

Single File URL
```
<?xml version="1.0" encoding="ISO8859-1" ?>
<ts_vdoc>
<ts_vdoc_type>file</ts_vdoc_type>
<ts_vdoc_url>samples/ccitt.tif</ts_vdoc_url>
</ts_vdoc>
```

Directory UNC
```
<?xml version="1.0" encoding="ISO8859-1" ?>
<ts_vdoc>
<ts_vdoc_type>directory</ts_vdoc_type>
<ts_vdoc_path>\\YOUR-447023AE6B\IMAGES\directory1234</ts_vdoc_path>
</ts_vdoc>
```

Compound Document
```
<?xml version="1.0" encoding="ISO8859-1" ?>
<ts_vdoc>
<ts_vdoc_type>multifile</ts_vdoc_type>
<ts_vdoc_url>samples/single_page_tiffs/p1_split_ab.tif</ts_vdoc_url>
<ts_vdoc_url>samples/single_page_tiffs/p1_split_ac.tif</ts_vdoc_url>
<ts_vdoc_url>samples/single_page_tiffs/p1_split_ad.tif</ts_vdoc_url>
</ts_vdoc>
```

5.7   Session-based XML Virtual Documents

Virtual XML documents may also be stored as an ASP.Net Session variable AT_VDOC. In this case the following URL may be used.

http://localhost/dev/ts2/tiffpilot.aspx?VD=session

Here is an example of setting the AT_VDOC session variable :

```
<%
// Example Session Virtual Document

var s='<?xml version="1.0" encoding="ISO8859-1" ?> ';
s+='<ts_vdoc>';
s+='<ts_vdoc_type>multifile</ts_vdoc_type>';
s+='<ts_vdoc_url>samples/single_page_tiffs/p1_split_ac.tif</ts_vdoc_url>';
s+='<ts_vdoc_url>samples/single_page_tiffs/p1_split_aa.tif</ts_vdoc_url>';
s+='<ts_vdoc_url>samples/single_page_tiffs/p1_split_ab.tif</ts_vdoc_url>';
s+='</ts_vdoc>';

Session["AT_VDOC"]=s;

%>
```

5.8   PDF Annotation Box Feature

The PDF "Annotation Box" feature creates a fixed "annotation" at the top of each page. The annotation will be a text box (black background, white text) with contents determined by the parameters marked with an * below – an example is shown below.
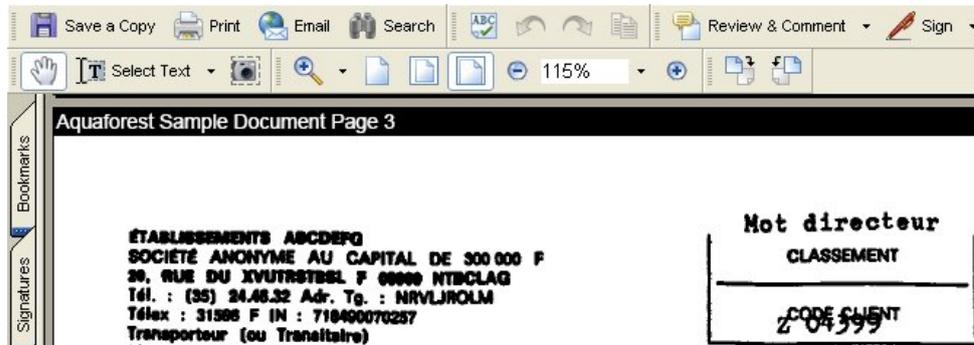
5.9   Text File Support

A text file may be passed using the FN parameter. A simple PDF file will be generated and streamed to the browser using the parameters described in the "TIFF Pilot Configuration Parameters" section.

5.10   Passing PDF Files

If a PDF file is passed using the FN parameter, the file is streamed to the browser by tiffpilot.aspx with no additional conversion.

5.11   TIFF Pilot Parameter Summary

Parameter	Allowable Values	Notes
FN	Fully qualified file name of the TIFF or Text document or virtual document to be displayed.	Mandatory.
VD		If FN represents a virtual document, this should be set to *path*
PD	1.	Mandatory.
SN	Stamp Name	
SV	Stamp Value	Value to be substituted for %s in the stamp definition string.
*AS	String	Annotation string. May include %p which will be replaced by the page number., and %n which will be replaced by the total number of pages in the document.
*AH	Integer	Annotation "box" height (default value=13)
*AF	1-3	Font : 1=HELVETICA (default) 2=COURIER 3=TIMES-ROMAN
*AZ	Integer	Font Size (default value=9)
*AJ	1-3	Justification : 1=LEFT (default) 2=CENTER 3=RIGHT
SF	Scale Factor	SF allows a scale factor to be applied to the image. So, for example SF=0.9 will scale the TIFF Images to 90% of their original size.
SPDF	1	When set, the generated PDF will be "downloaded" to the user rather than displayed, allowing the user to save the file.

*only available when acess via tiffpilot.exe rather than tiffpilot.aspx

6 TIFF PILOT CONFIGURATION PARAMETERS

The web.config file enables a number of parameters to be set under the <applicationSettings> section

Parameter Name	Description
ts_backend	By default set to .NET for TIFFs held in files, or DB if the TIFFs are in a database.
ts_cstring ts_image_table ts_image_table_key ts_image_column ts_annotation_table* ts_annotation_table_key* ts_annotation_column*	Database parameters – see "Database Resident Document Images" section for full details
Ts_gen_font	The font to be used when generating PDF from text files. Default TIMES_ROMAN – can also be set to COURIER
Ts_gen_fontsize	Font size to be used when generating PDF from text files. Default 10.
Ts_gen_pagesize	Page size to be used when generating PDF from text files. Default A4. Can also be LETTER.
Ts_gen_pagesep	Line of text to be treated as a page separator to be used when generating PDF from text files. Default _P_.
Ts_gen_pageend	Line of text to be treated as a file end indicator to be used when generating PDF from text files. Default _E_.

7   DATABASE-RESIDENT DOCUMENT IMAGES

Tiff pilot supports the access of document images stored in SQL Server 2005 image columns. To configure the product for use with a database, values in the <applicationSettings> part of the web.config .file in the Tiff pilot directory need to be modified.

Variable	Description
ts_cstring	Database Connection String
ts_image_table	Name of the table containing the document images
ts_image_table_key	The key column of the table [A single key column is required]
ts_image_column	Name of the *image* column holding the document image
ts_annotation_table*	Name of the table to hold annotations
ts_annotation_table_key*	The key column of the table [A single key column is required]
ts_annotation_column*	Name of the *text* column to hold annotations

* A table is always required, even if TIFF Server has not been used to create the annotations.

For test purposes, a backup of a sample database – tiffserver_docs.bak is included in the samples directory. If this is restored to a database of the same name, and the default connection string adjusted for your database server, you will be able to use http://server/tiffpilot/dbsample.aspx to test database connectivity. The database contains a single table tiffpilot_docs_table with one sample row. The table has the definition shown below :

```
CREATE TABLE [dbo].[tiffpilot_docs_table] (
        [doc_id] [int] NULL ,
        [doc_contents] [image] NULL ,
        [doc_annotations] [text] COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
        [timestamp] [timestamp] NULL
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
```

Accessing database-resident documents can be made by using the at_url parameter and passing the key of the required row.

For example http://localhost/dev/ts2/tiffpilot.aspx?FN=1234 will use the where clause "WHERE doc_id=1234".

8 USING STAMPS

TIFF Pilot allows dynamic and static textual stamps to be placed onto the images and PDF documents by means of a stamps configuration file (stamps.txt in the stamps directory) together with appropriate URL parameters.

Supported compression schemes for use of this feature are :

- CCITT Group 3 (1-D), Group 3 (2-D)
- CCITT Group 4
- CCITT RLE
- Uncompressed (Bitonal)

8.1 Stamp Placement
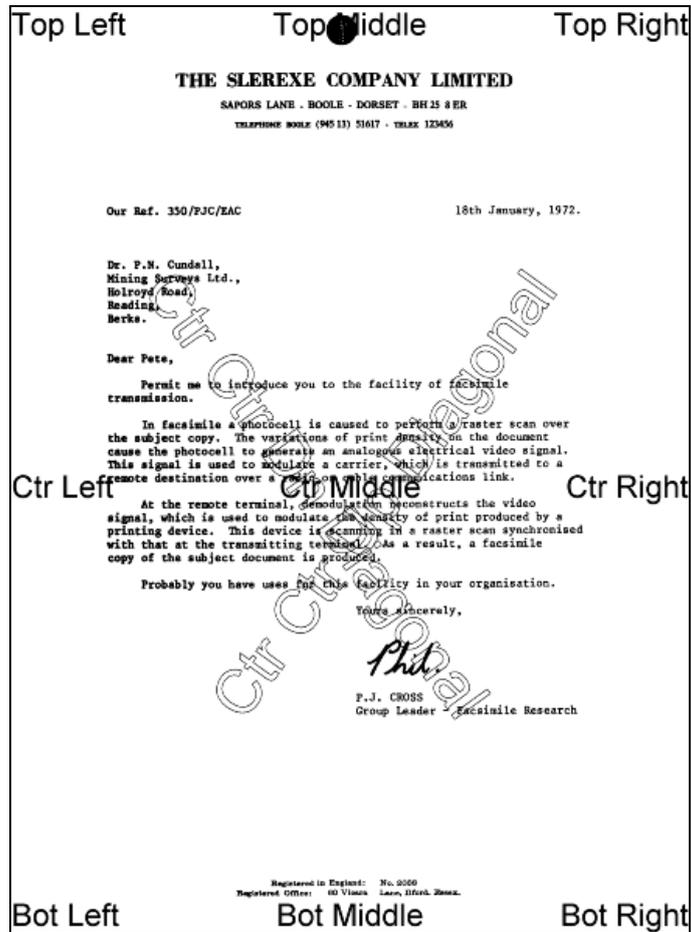
The image above indicates the possible placement for stamps. These are determined according to the parameters in the stamps.txt configuration file (in the tiffpilot/stamps directory). The product comes with a sample set of stamps that are used with the sample images.

8.2 Stamp Specifications

For example, the stamp that reads "Ctr Ctr Up Diagonal" would be produced by the following lines in the file :

```
BEGINSTAMP
afsName=STAMP
afsText=Ctr Ctr Up Diagonal
afsFontSize=63
afsFont=HELVETICA
afsTextMode=1
afsVpos=CENTER
afsHpos=CENTER
afsDiag=UP
ENDSTAMP
```

Here is a description of each of the parameters *which are case sensitive :*

Parameter	Description
BEGINSTAMP	Required to mark the beginning of a stamp specification.
ENDSTAMP	Required to mark the end of a stamp specification.
afsName	Stamp name. If the stamp name is "STAMP" then the stamp will always be applied. Any other name is used as an identifier and the stamp will only be applied when the at_sn or SN parameters match the name. (See the reference guide section on integration, and the sample pages for details)
afsText	Stamp text. This may be a fixed piece of text, or may include %p (which will be replaced by the page number) or %s which will be replaced by the value of the at_sv or SV parameters match the name. (See the reference guide section on integration, and the sample pages for details)
afsFontSize	Point size for the stamp text.
afsFont	Font to be used. The following are supported : TIMES-ROMAN HELVETICA COURIER
afsTextMode	1=Outlined Text 2=Sold Text
afsVpos	Vertical Position of the stamp, which may be one of the following : TOP CENTER BOTTOM
afsHpos	Horizontal Position of the stamp, which may be one of the following : LEFT CENTER RIGHT
afsDiag	Diagonal orientation of the stamp, which may be one of the following : NONE UP DOWN
afsWeight	Font Weight : 0 (default) – 5 (most bold)
afsStartPage	First page of the document to which stamps should be applied (default 1)
afsEndPage	Last page of the document to which stamps should be applied (default 0 which means there is not a limit)
afsPageIncrement	Determines whether stamps should only be applied every *n*th page where n is afsPageIncrement. Default is 0 which means stamps will be applied to all pages (subject to start/end page specifications).

9   CUSTOM SECURITY DLL

A class is provided with TIFF Pilot - the code contains two methods which may be customized to meet specific security needs. The DLL produced is called by tiffpilot.exe.

```
bool pilotControl::allowAccess()
```

The allowAccess class returns true or false depending upon whether access should be allowed to the current file request. The template code includes code to extract the requested filename from the query string.

```
bool pilotControl::silentMode()
```

The silentMode class can be set to return false to stop tiffpilot.exe returning any output in error cases (eg "Cannot Open….").

The Visual C++ source code is provided as a Visual Studio 2005 project in the TIFF Pilot custom folder (Drive:\installfolder\tiffpilot\custom).

The project will build pilotControl_D.dll and this dll should be placed in the TIFF Pilot folder, replacing the distribution copy which should be backed up first.

The code should be reasonably self-explanatory but please email support@aquaforest.com with any questions.

For reference, the following subdirectories are created within the Tiff pilot root folder:

10.1   Root Folder

File	Function
tiffpilot.aspx	Entry point
tiffpilot.exe	PDF Generation
tpstart.aspx	Launch page for test and samples
tpsample.aspx	Sample Documents
tptest.aspx	Test pages
tpdbsample.aspx	Database-resident document test page
web.config	Application configuration file

10.2   Sub Folders

Directory	Contents
bin	Tiff pilot .Net DLLs
docs	Documentation
images	Default Icons & Images
license	License Key file
samples	Sample Documents
stamps	Stamp Definitions
temp	Temporary Files.

10.3   Temporary Files

(a) Conversion Temporary Files
The product may create temporary files where necessary in converting from one TIFF format to another – sometimes required when generating PDFs to ensure that the TIFF format is compatible with that accepted by PDF.   These files (named TMP999.tif where 999 is the process ID) will be created (and destroyed once the process is complete) in a directory according to the following precedence.

(1) The directory specified by the TMP environment variable, if defined.
(2) The directory specified by the TMPDIR environment variable, if defined.
(3) The TIFF Pilot install directory

The CGI executable (tiffpilot.exe) will need permission to write files into this directory if such conversions are necessary.

(b) Virtual Document Temporary Files
Certain virtual documents will be constructed in the TIFF Pilot *temp* directory, with a subdirectory for each session.