Trimble® 4D Control – Version 4.6

Web

Installation Guide

Trimble Inc. - Documentation

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1 Introduction

Trimble® 4D Control Web provides a web interface to users for visualizing and analyzing sensor data.

Trimble® 4D Control Web is a website application written that runs on **Microsoft ASP.NET** hosted by Internet Information Services (IIS) on Microsoft Windows.

Trimble® 4D Control Web and **Trimble® 4D Control Server** are usually installed on the same server computer. **Trimble® 4D Control Server** must first be installed**. Trimble® 4D Control Web** can then be installed; also on a separate **Web Server** computer if required.

We will use the term *Target Server Computer* to refer to the computer onto which you are installing **Trimble® 4D Control Web**.

1.1 Installation Prerequisites

1.1.1 Trimble® 4D Control Server

Before running the **Trimble® 4D Control Web** installation on the *Target Server Computer*, please verify that the *Target Server Computer* has **Trimble® 4D Control Server** installed on it, OR that the *Target Server Computer* has network connectivity to a Server Computer where **Trimble® 4D Control Server** is installed.

1.1.2 Windows Updates and User Rights

Ensure that the latest Windows updates are installed on the *Target Server Computer* and that you have administrative rights.

Also when you run the installer found on the installation DVD, it will automatically check and install the following prerequisites for **Trimble® 4D Control Web** on the *Target Server Computer* at the start of the installation:

- Microsoft .NET Framework 4.6.1.
- Internet Information Services (IIS) and required features.

1.1.3 Network Connectivity

If **Trimble® 4D Control Web** are to be installed on a separate **Web Server** computer then port 31058 needs to be opened on the *Target Server Computer* firewall.

Trimble® 4D Control Web will also need to access SQL Server port 1433 to access the Monitoring Database. If Microsoft SQL Server is installed on the *Target Server Computer*

please make sure that SQL Server port 1433 is opened on the Database Server Computer and that TCP/IP Network access is enable on the SQL Server Instance. Browsers on other computers will access **Trimble® 4D Control Web** via Port 80. It is important to ensure that the firewall configuration on the *Target Server Computer* allows TCP traffic on port 80.

Trimble® 4D Control Web makes use of E-mail communication. The *Target Server Computer* must therefore also be able to send SMTP mail via the port of the mail server of your choice.

1.1.4 Internet Information Services (IIS)

Trimble® 4D Control Web requires Internet Information Services and relevant features to be installed on the *Target Server Computer*. The installer will automatically check and install all the required IIS feature for you, so normally you would not be required to manually install IIS on the *Target Server Computer*. Nevertheless below is the complete list of relevant IIS features used by Trimble® 4D Control Web:

Name	Feature Code	Description
.NET Extensibility 4.6	IIS-NetFxExtensibility45	Enable your Web server to host .NET Framework v4.6 applications
Application Development Features	IIS-ApplicationDevelopment	Install Web server application development features
ASP.NET 4.6	IIS-ASPNET45	Enable your Web server to host ASP.NET v4.6 applications
ASP.NET 4.6	NetFx4Extended-ASPNET45	ASP.NET 4.6
Basic Authentication	IIS-BasicAuthentication	Require a valid Windows user name and password for connection.
Centralized SSL Certificate Support	IIS-CertProvider	Centralized SSL Certificate Support enables you to manage SSL server certificates centrally using a file share. Maintaining SSL server certificates on a file share simplifies management since there is one place to manage them.
Client Certificate Mapping Authentication	IIS-ClientCertificateMappingAuthentication	Authenticate client certificates with Active Directory accounts.
Common HTTP Features	IIS-CommonHttpFeatures	Installs support for Web server content such as HTML and image files.
Default Document	IIS-DefaultDocument	Allows you to specify a default file to be loaded when users do not specify a file in a request URL
Directory Browsing	IIS-DirectoryBrowsing	Allow clients to see the contents of a directory on your Web server
Dynamic Content Compression	IIS-HttpCompressionDynamic	Compress dynamic content before returning it to client
HTTP Errors	IIS-HttpErrors	Allows you to customize the error messages returned to clients
HTTP Redirection	IIS-HttpRedirect	Redirect client requests to a specific destination
IIS Client Certificate Mapping Authentication	IIS-IISCertificateMappingAuthentication	Map client certificates 1-to-1 or many-to-1 to a Windows security identity.
IIS Management Service	IIS-ManagementService	Allow the web server to be managed remotely from another computer via the Web server Management Console
Internet Information Services	IIS-WebServerRole	Internet Information Services provides support for Web and FTP servers, along with support for ASP.NET web sites, dynamic content such as Classic ASP and CGI, and local and remote management.
ISAPI Extensions	IIS-ISAPIExtensions	Allow ISAPI extensions to handle client requests
ISAPI Filters	IIS-ISAPIFilter	Allow ISAPI filters to modify Web server behavior
Performance Features	IIS-Performance	Install performance features
Request Filtering	IIS-RequestFiltering	Configure rules to block selected client requests.
Security	IIS-Security	Enable additional security features to secure servers, sites, applications, vdirs, and files
Static Content	IIS-StaticContent	Serve .htm, .html, and image files from a Web site

Static Content Compression	IIS-HttpCompressionStatic	Compress static content before returning it to a client
URL Authorization	IIS-URLAuthorization	Authorize client access to the URLs that comprise a Web application.
Web Management Tools	IIS-WebServerManagementTools	Install Web management console and tools
Windows Authentication	IIS-WindowsAuthentication	Authenticate clients by using NTLM or Kerberos.
World Wide Web Services	IIS-WebServer	Installs the IIS World Wide Web Services. Provides support for HTML web sites and optional support for ASP.NET, Classic ASP, and web server extensions.

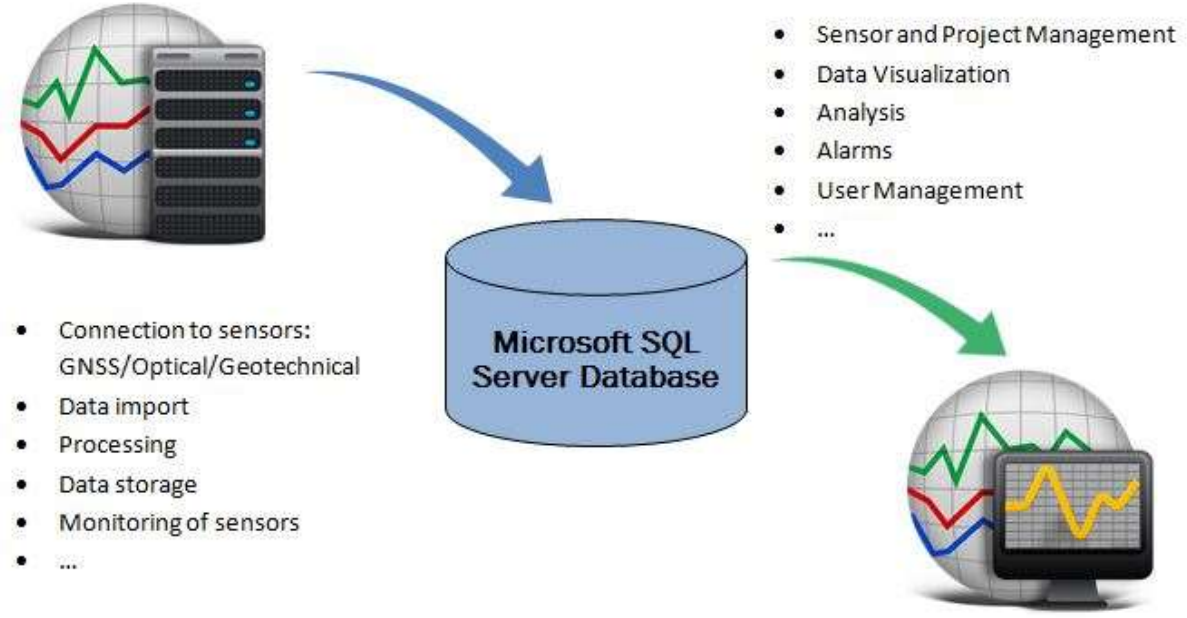
Figure 1: List of IIS features used by Trimble 4D Control Web

1.2 Supported Browsers

Trimble® 4D Control Web requires either the latest versions of Chrome, Firefox, Microsoft Edge or Microsoft Internet Explorer (IE) version 9 or higher on computers used by the users of Trimble® 4D Control Web to access the website.

1.3 General Overview

Trimble 4D Control Server



Trimble 4D Control Web

2 Installation Instructions

Below the steps to install **Trimble® 4D Control Web**:

a. Execute the **Trimble® 4D Control Web** setup.exe file or launch it from the Installation DVD splash screen. If you are asked whether or not the program may be allowed to make changes to your computer then click on “Yes”.

b. The Installer will verify that the required IIS features are installed on the *Target Server Computer.* A prompt will be displayed if some of these features are missing. If so click on “Enable” to proceed.

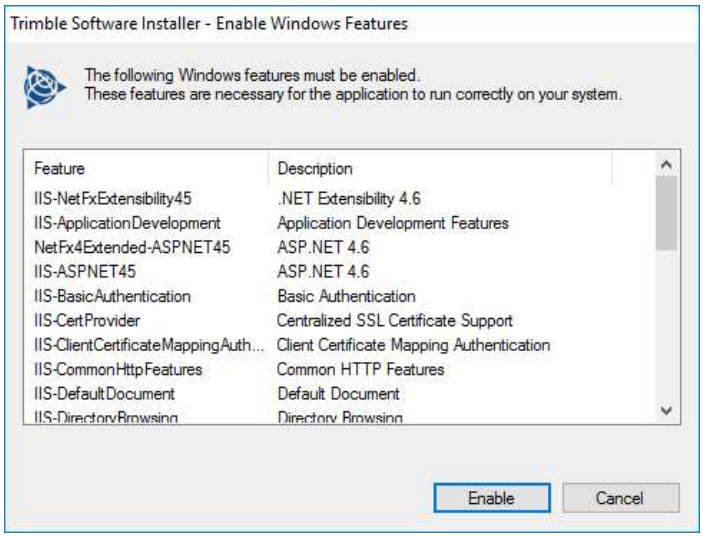


Figure 2: Prompt for IIS feature installation

c. The installer will then proceed to install the required IIS features:

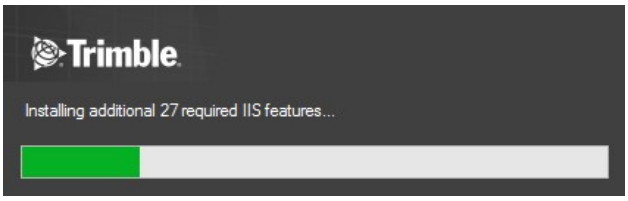


Figure 3: Installing IIS features notice

d. Next you should see the installation wizard appear with a “Welcome” message and instructions on how to download this document.

Figure 4: Installation Welcome Step

e. Accept the **license terms** and click “Next”:

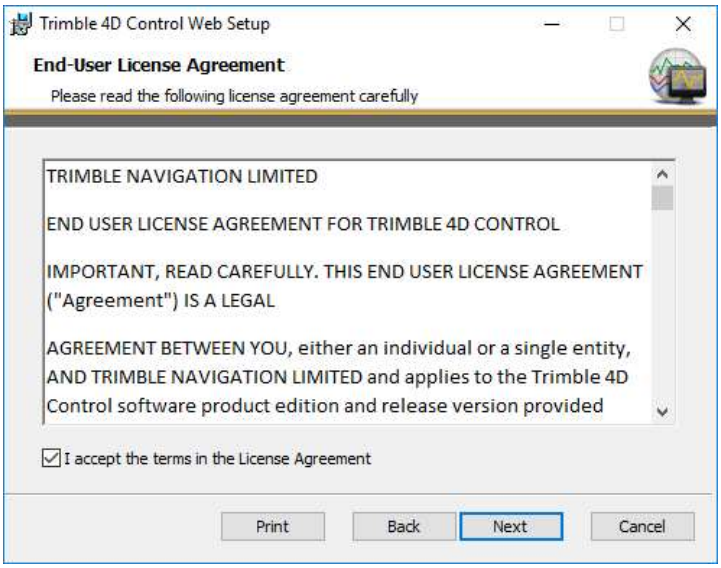


Figure 5: License Agreement

f. The next page will prompt for the **Trimble® 4D Control Server** network name. Here you need to specify the *computer network name where* **Trimble® 4D Control Server** is installed if you are installing **Trimble® 4D Control Web** on a separate computer than **Trimble® 4D Control Server**. If **Trimble® 4D Control Web** is however to be installed on the same computer as **Trimble® 4D Control Server** (as the case in the figure below) then you can simply click on the “Next” button to proceed.

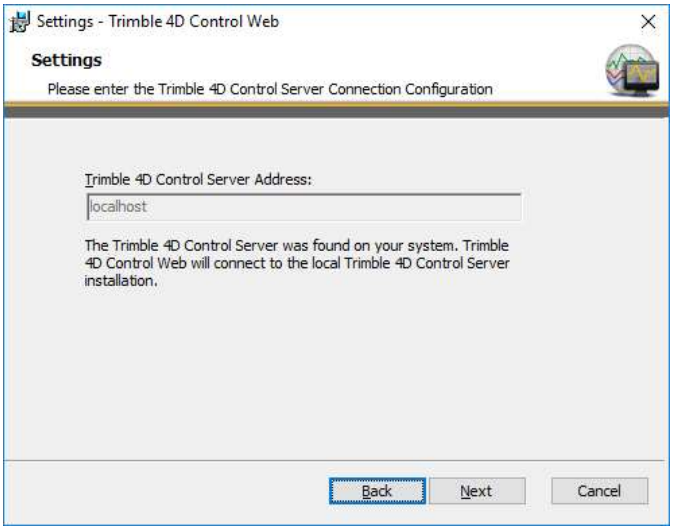


Figure 6: Trimble 4D Control Server Connection Configuration

g. You will then be prompted to specify the location of the database server hosting the Monitoring Database. If **Trimble® 4D Control Server** is installed on your *Target Server Computer* then these settings will already be populated and you can simply click on

the “Test Connection” button and then click on the “Next” button. Otherwise you will first need to specify the address of the SQL server, credentials and database.

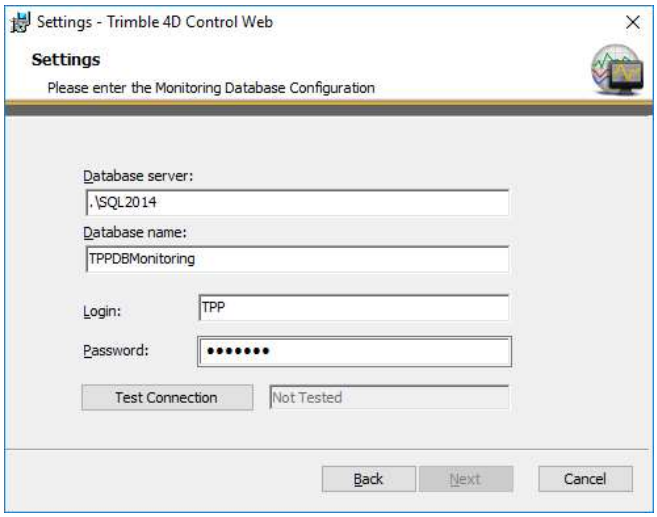


Figure 7: SQL Connection Details

h. In the next step, you can change the location where **Trimble® 4D Control Web** should be installed. It is however recommended not to change this location. Click the “Next” button to proceed.

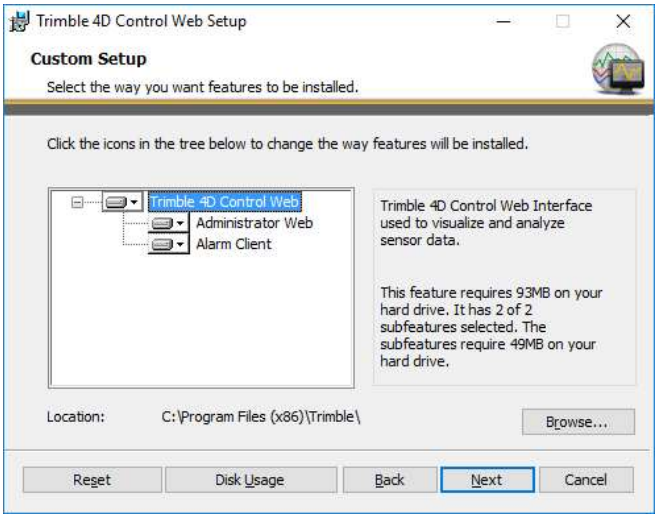


Figure 8: Installation Components and Location

i. The installation now has enough information to continue and install the **Trimble® 4D Control Web** application. Click on the “Install” button and wait for the installation to complete.

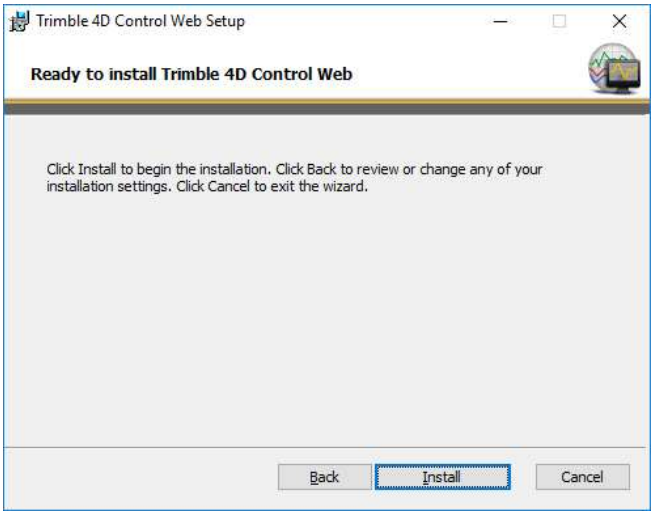


Figure 9: Click "Install" and wait for the installation to complete.

j. Once the installation is completed you can select the checkbox to immediately launch **Trimble® 4D Control Web** once the Setup Dialog is closed. Click on the “Finish” button to close the Setup Dialog.

Figure 10: Click "Finish" when installation is completed.

3 Open Trimble 4D Control Web

You are now ready to start using the **Trimble® 4D Control Web** application. Open a browser and navigate to “http://[Your Web Server IP or Address]/T4DWeb”. You should be presented with the following page:

Figure 11: Trimble 4D Control Web login page

NB: The default user to login onto Trimble® 4D Control Web is the username “Admin” and password “Admin” (case sensitive).

4 HTTPS setup instructions (optional)

After completing the installation verification, you may want to access **Trimble® 4D Control Web** via the HTTPS protocol. In order to do this, you need to install a SSL certificate in IIS and enable HTTPS access.

You can also configure **Trimble® 4D Control Web** to only allow access via the HTTPS protocol.

4.1 SSL certificate and HTTPS bindings in IIS

You can acquire a trusted SSL certificate from a certificate authority such as **digicert** or **GlobalSign**. The particular certificate authority will provide you with the steps to follow to request and install their trusted SSL certification on IIS. After installing your trusted certificate follow step (c) below to enable HTTPS access on IIS.

Alternatively you can create your own self-signed certificate by following these steps:

a. In IIS manager, click the computer name node and In Features View, double-click **Server Certificates**.

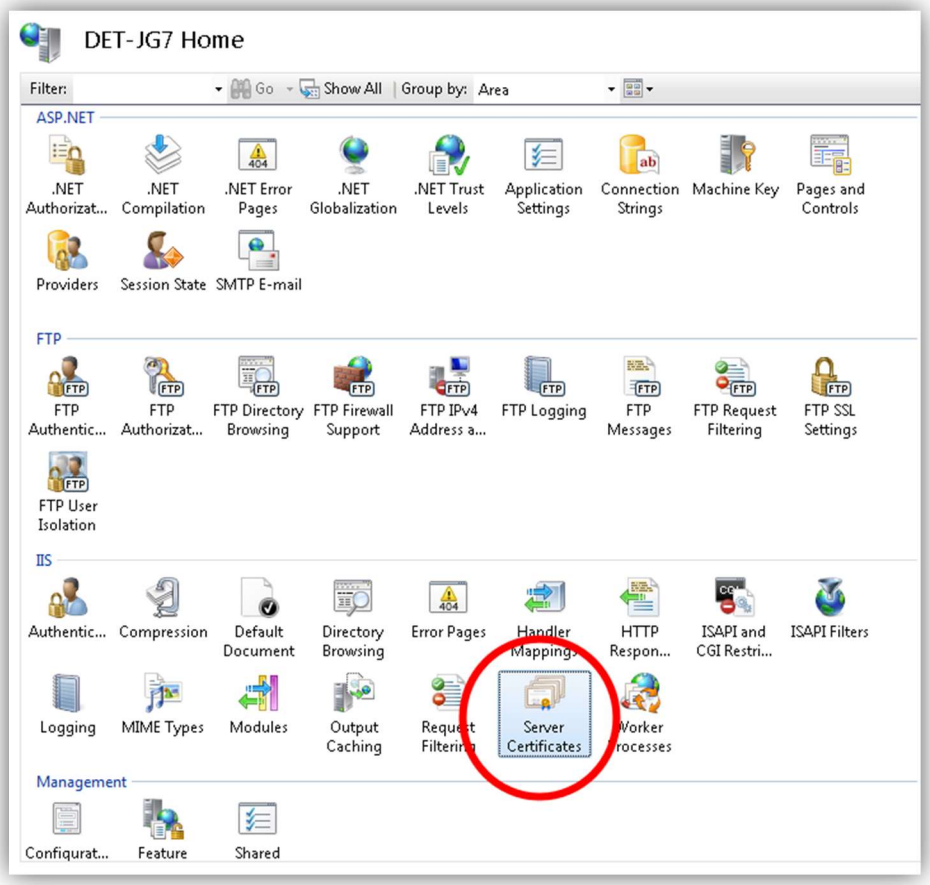


Figure 12: SSL : Select server certificates

b. On the Server Certificates View click on the action **Create Self-Signed Certificate**. A certificate should be created and appear in the list on the left pane.

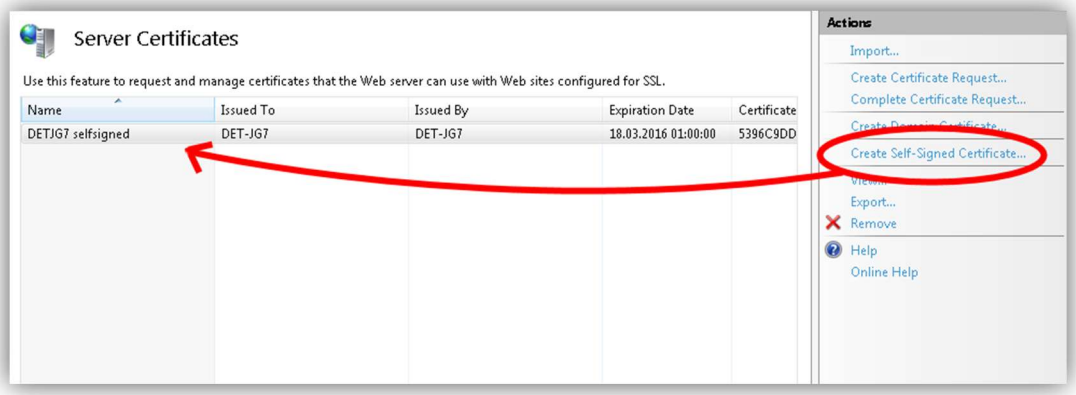


Figure 13: SSL : Create Self-Signed certificate

c. In IIS manager
(1) Click on the **Default Web Site** node and
(2) Click on the action **Bindings...**.
(3) In the **Site Bindings** dialog, click on the **Add** button.
(4) Select **https**, **All Unassigned** and port **443** and make sure you enter the Url that matches your certificate.
(5) Choose the certificate uploaded previously.

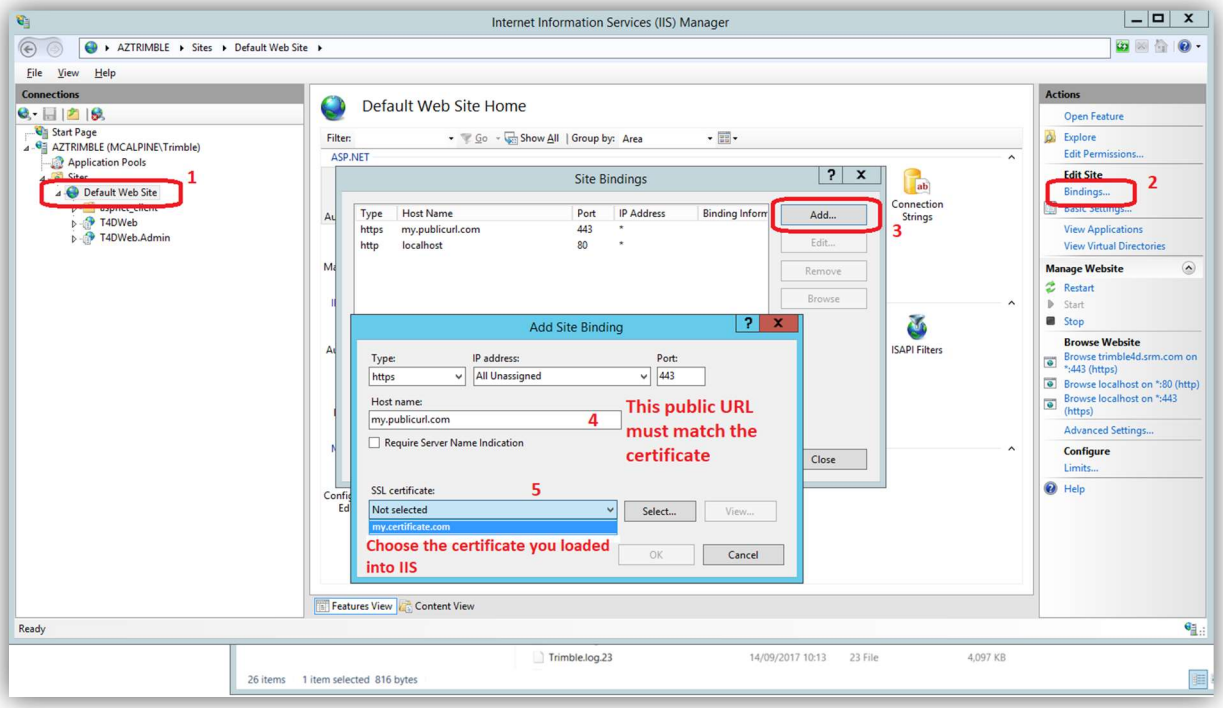


Figure 14: Edit IIS Bindings

d. Edit the existing http binding and change the **Host name** to “localhost”. This will restrict http access to localhost **only**.

Your **http** and **https** bindings should now look like this (you can ignore other bindings if they exist):

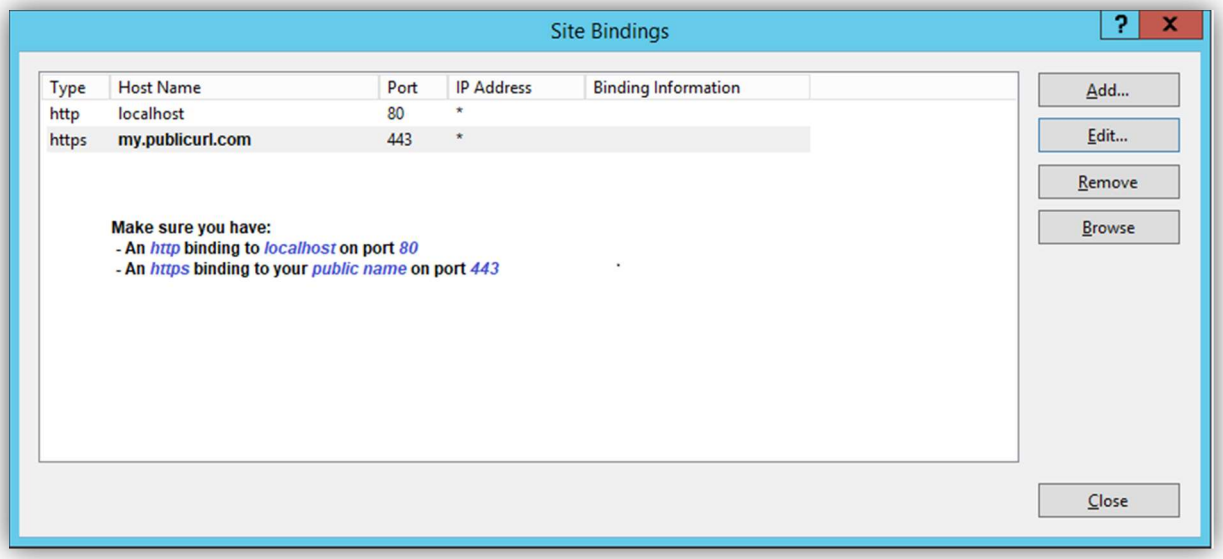


Figure 15: What *http* and *https* bindings should look like.

5 Troubleshooting

5.1 Errors when browsing to Trimble 4D Control Web

5.1.1 HTTP Error 500.19 – Internal server error

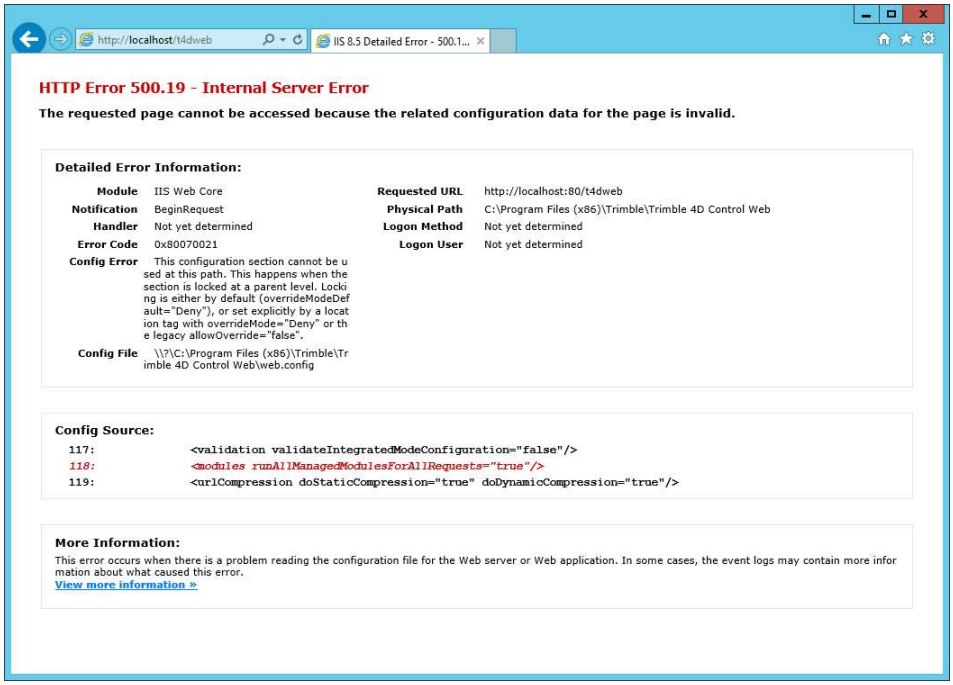


Figure 16: Http Error 500.19

When trying to access Trimble® 4D Control Web from the server computer the following message is displayed:

HTTP Error 500.19 – Internal server error with details: xxx cannot be read because it is missing a section declaration.

This problem is caused by particular **IIS Feature Delegation** settings that are incorrect. Correct the particular **IIS Feature Delegations** by the following steps:

Open **IIS Manager**, select the computer name node and double-click **Feature Delegation** under Management:

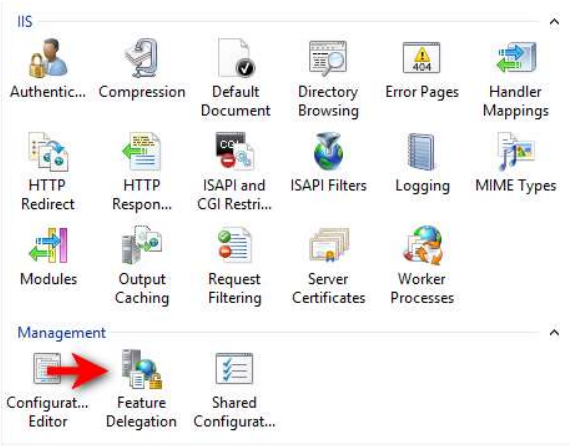


Figure 17: Http Error 500.19

Make sure that the delegation setting of the features *Handler Mappings* and *Modules* are both set to *Read/Write*.

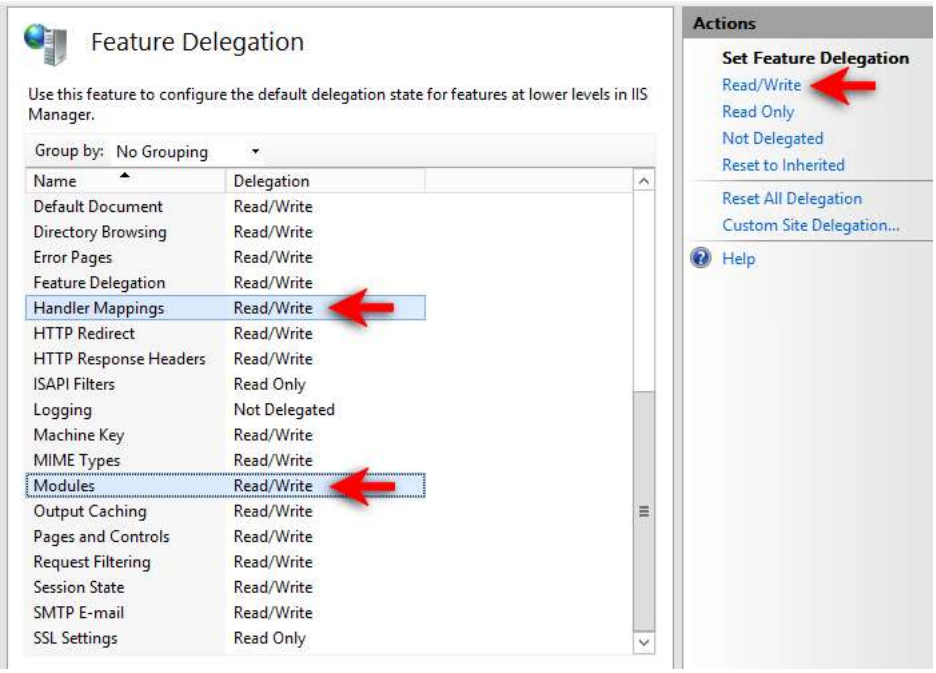


Figure 18: Http Error 500.19: Enable Read/Write for Handler Mappings and Modules

You can now retry accessing Trimble® 4D Control Web from the server computer to make sure the issue has been resolved.
If the issue still persists please refer to Microsoft Support page:
https://support.microsoft.com/en-us/kb/942055

5.1.2 Could not load type System.ServiceModel.Activation.HttpModule

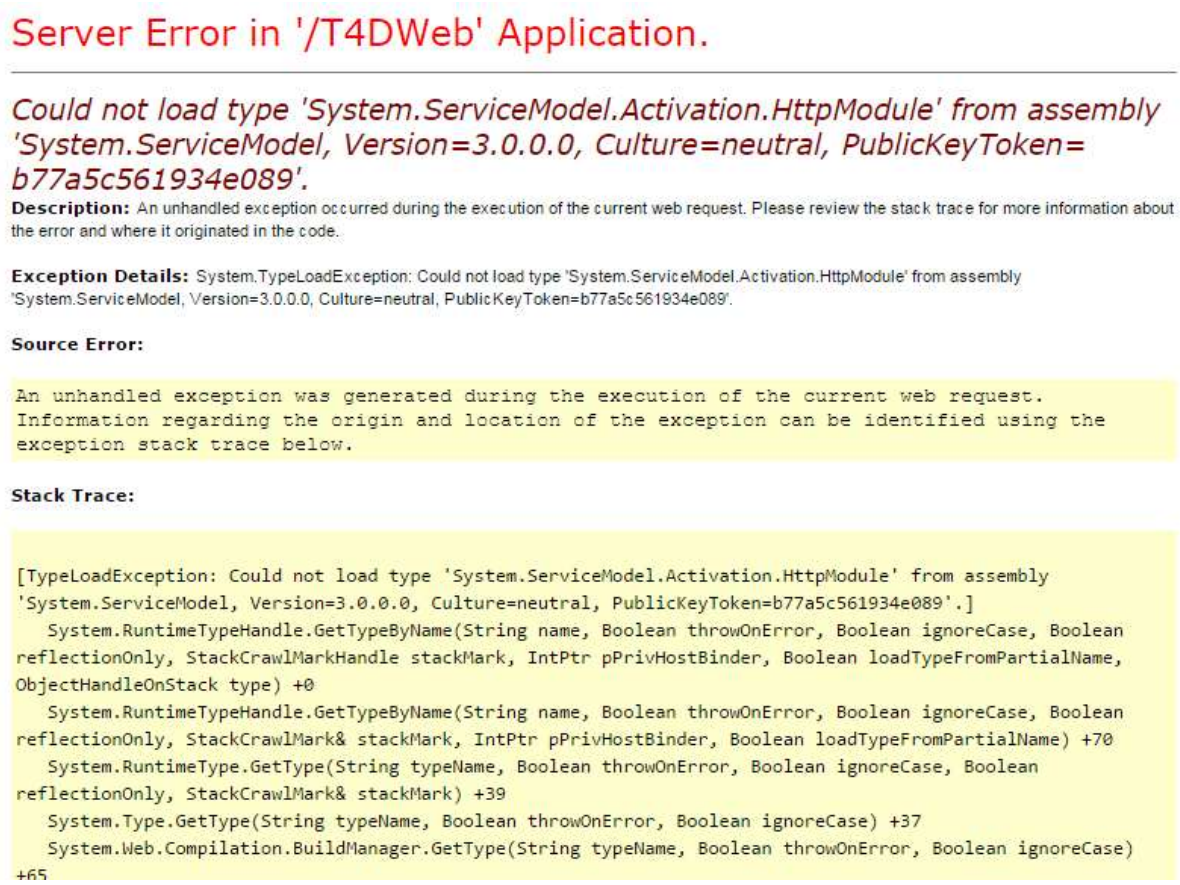


Figure 19: Could not load type System.ServiceModel.Activation.HttpModule

When trying to access Trimble® 4D Control Web from the server computer the following message is displayed:
Could not load type System.ServiceModel.Activation.HttpModule

This is a known issue with IIS.
All NET 4.5 websites running on IIS will display this error message under the following situations:

1. On **Windows Server 2008**, it could happen when you install .NET 3.x framework or IIS 7.5 with Activation features after .NET framework 4.x is installed
2. On **Windows Server 2012**, it always happens when you install .NET framework 3.x with Activation features.

We prescribe the **following** solution for each case:

1. For **Windows Server 2008** Microsoft officially announced the solution (http://support.microsoft.com/kb/2015129):
   Run **aspnet_regiis.exe /iru** where the **aspnet_regiis.exe** file can be found in one of the following locations:
   %windir%\Microsoft.NET\Framework\v4.0.30319
   %windir%\Microsoft.NET\Framework64\v4.0.30319 (on a 64-bit computer)

2. For **Windows Server 2012** the command aspnet_regiis.exe is not supported, instead follow these steps:

   a. In **IIS manager**, click the computer name node.

   b. In **Features View**, double-click **Modules**.

   c. Find **ServiceModel** and remove it:

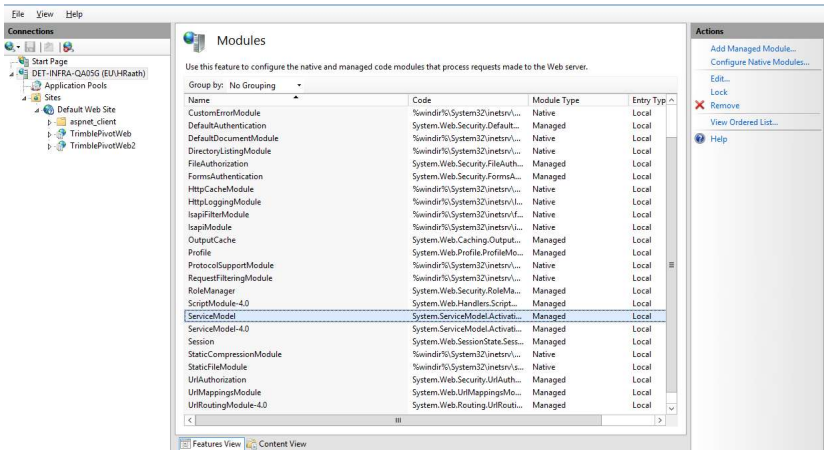


Figure 20: Remove ServiceModel from IIS Modules on Windows Server 2012

   d. Go back to the **Features View** and double-click **Handler Mappings**.

   e. Find **svc-Integrated** and remove it:

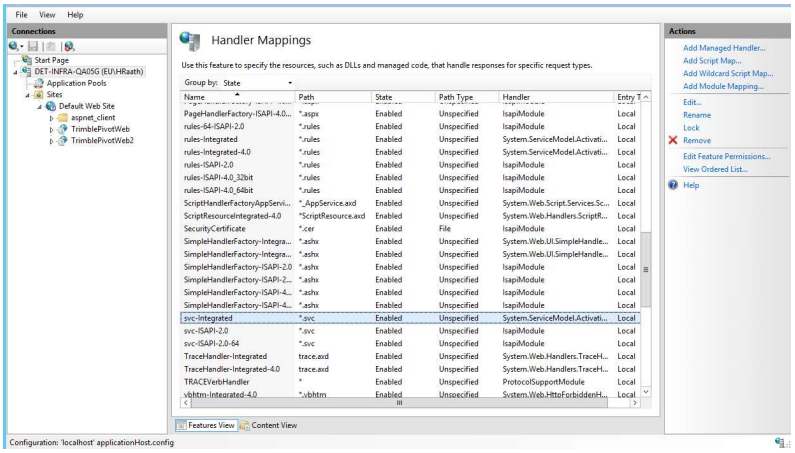


Figure 21: Browse to the ISAPI Restrictions of your Web Server in IIS

   f. Restart IIS and the problem will be resolved.

6 Further Reading

6.1 Trimble 4D Control Web

How to use Trimble 4D Control Web:
http://help.web.t4d.trimble.com/version4.6/web

6.2 Trimble 4D Control Server

How to install Trimble 4D Control Server:
http://setup-guide.web.t4d.trimble.com/version4.6/server

How to use Trimble 4D Control Server:
http://help.web.t4d.trimble.com/version4.6/server

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Release notice

This is the November 2016 release of the Trimble® 4D Control Web Installation Guide.

Product warranty information

For applicable product warranty information, please refer to the Warranty Card included with this Trimble product, or consult your Trimble dealer.