FusionOS Installer Instructions

This is the installation guide for the Fusion ONESolution installer. This guide provides instructions for installing, updating, and maintaining your Fusion REST web service. Each of these actions: installing, updating, or maintaining, has its own set of steps and instructions to follow. This guide explains what each of these actions does, and then guides and directs you to the steps you need to do for the action.

Configuration Checklist

Before you start the installation, go through the checklist below and fill out all the values. You will be prompted to enter this information during the install. You should also print this list and keep a copy for your records.

Item	Configuration Info	Customer's Value
1	**Application ID and Key**	
1a	Your App ID and App Key **Note:** Contact SunGard support to receive this value. This is a paired key consisting of a short (App ID) and long (App Key) encoded value.	**AppID:**_____ **AppKey:** _____
3	**ONESolution settings**	
3a	ONESolution domain\username	**Domain:**_____ **User:**_____
3b	OS Finance server name or IP	**Finance server:** _____

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Prerequisites

This section goes over prerequisites of other programs that must be installed before running the Fusion installation. The installation will not be able to install without these already installed on the server.

Go through the following checklist before starting any installation. For instructions, press **CTRL+Click** on the underlined portion of the text, and it will guide you to the section for that requirement.

Pre-Start Checklist

Item	Check	Confirmation
1	***Hardware Specifications***	**[ ] Processor** **[ ] RAM** **[ ] Disk Space**
2	***Windows Server and IIS Manager***	
2a	Windows 2012 Server with IIS 8	**[ ] Windows 2012 / IIS 8**
2b	***WebDeploy must be*** installed	**[ ] Web Deploy installed**
3	***Microsoft.NET Framework 4.0*** is installed	**[ ] .NET 4.0**
4	***Microsoft.NET Framework 4.5*** is installed	**[ ] .NET 4.5**
5	***Firewall*** access	
5a	The server must be externally accessible, unless being queried by internal only resources.	**[ ] DMZ or NAT**
5b	Configure IIS with a SSL certificate	**[ ] SSL Certificate**
5c	Open ports 443 to the Internet	**[ ] Internet Ports**

Hardware Specifications

Recommended hardware specifications:

- Windows 2012 64 bit
- 2 GHz processor (2 processors)
- 6 GB RAM
- 60 GB disk space

Windows Server and IIS Manager

IIS Manager should already be installed on the windows server as part of the operating system. The table below lists the valid operating systems (OS) and IIS version required. Click on the Windows OS name in the table to go to the IIS install instructions for the operating system. You can use this information to verify that IIS Manager is installed and setup correctly.

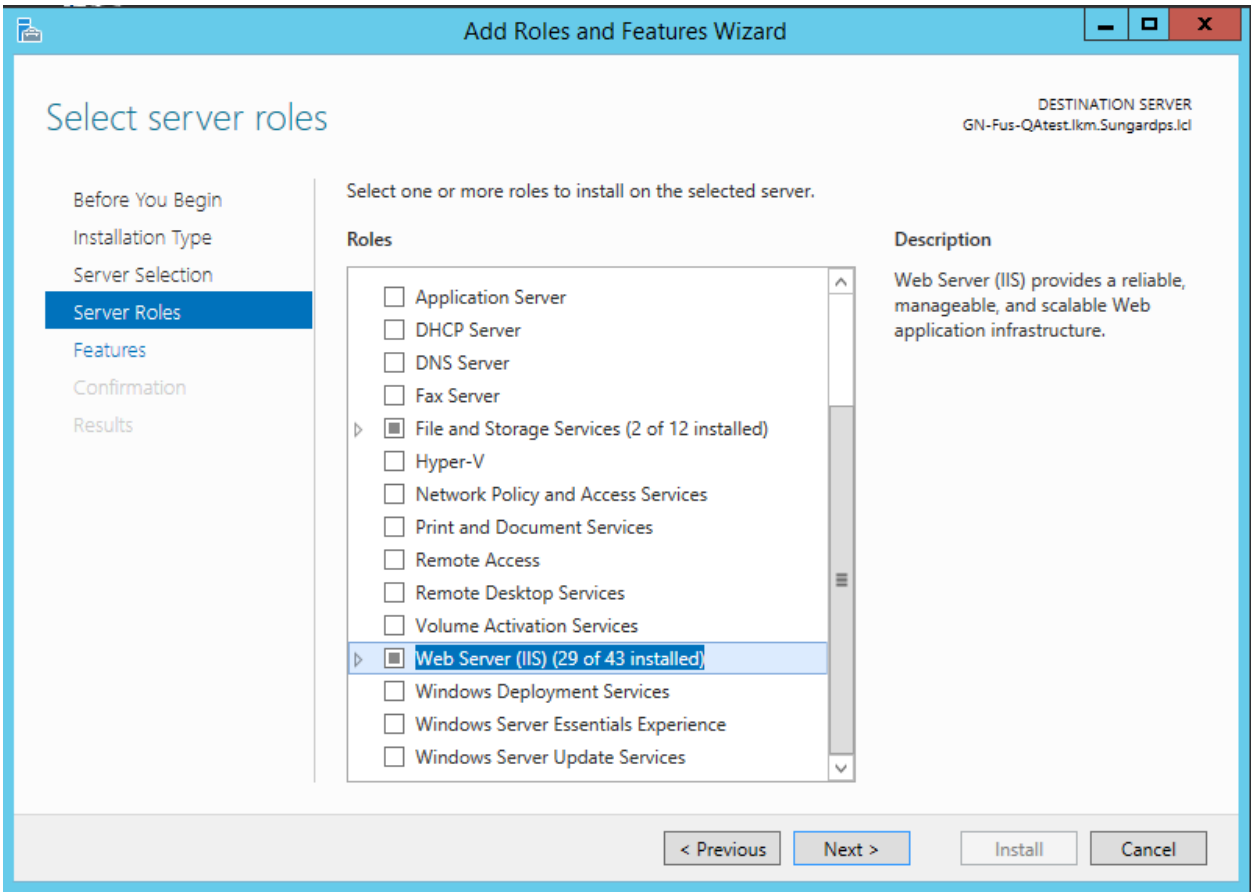
Windows OS	IIS version required
Windows Server 2012	IIS 8

IIS Manager Roles and Features

During the IIS installation, make sure to enable the following roles and features:

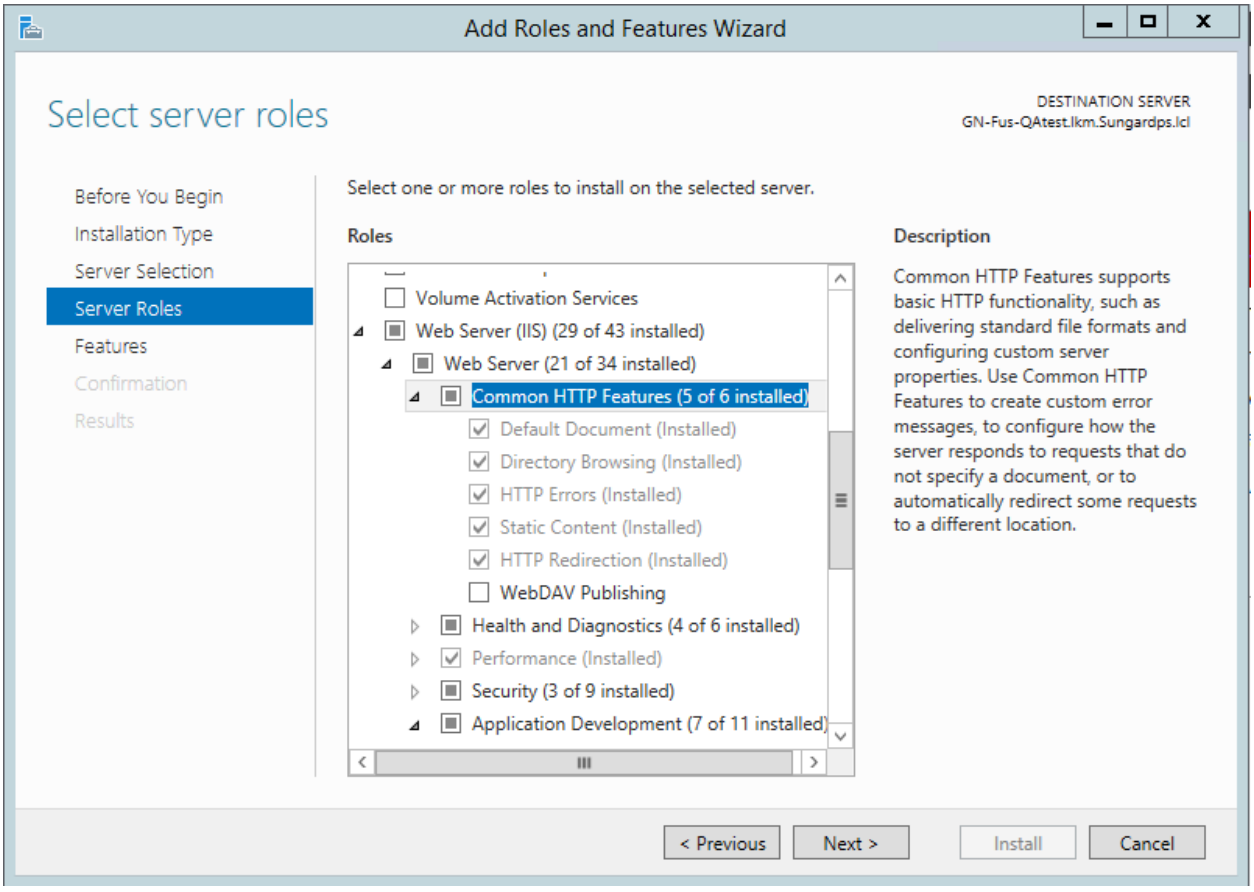
If this is the first time IIS is installed on the server, select the Web Server role.

- Roles: Web Server

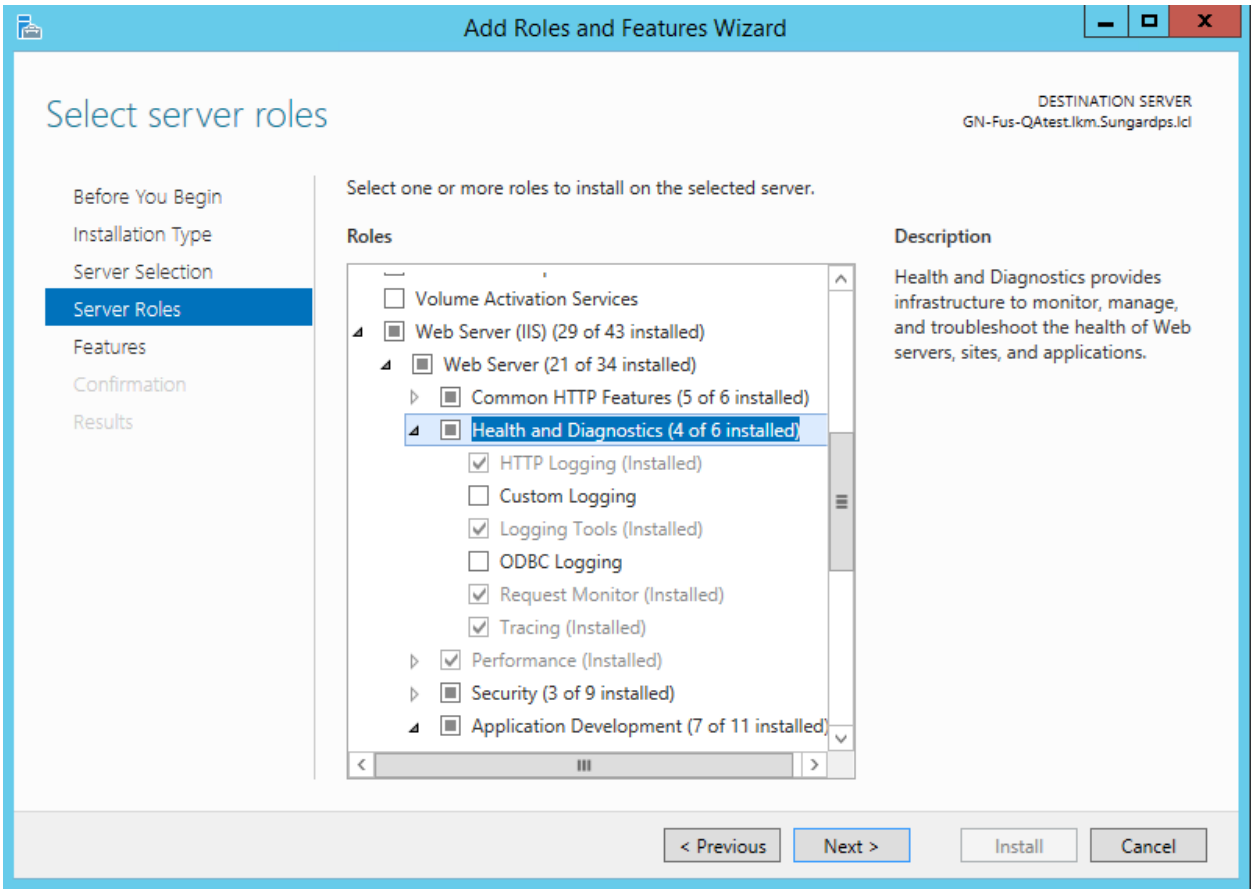


Select the following options under Web Server.
Note: If this is the first time you are installing IIS, these options may not be available until after the Features dialog, which comes next. After selecting the features, it will prompt you to select the Web Server settings that are displayed here.

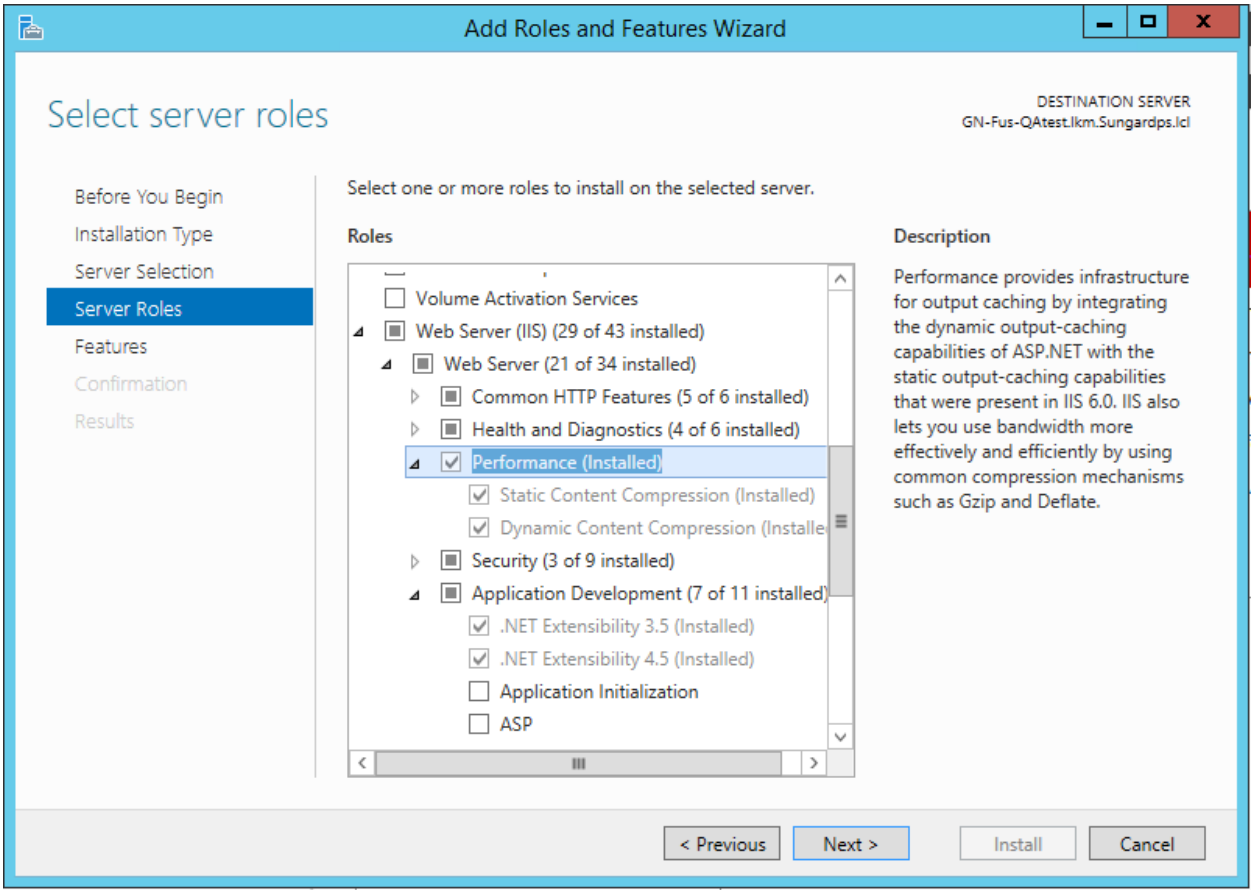
- Roles: Web Server (IIS) > Web Server > Common HTTP Features
  - Default Document
  - Directory Browsing
  - HTTP Errors
  - Static Content
  - HTTP Redirection



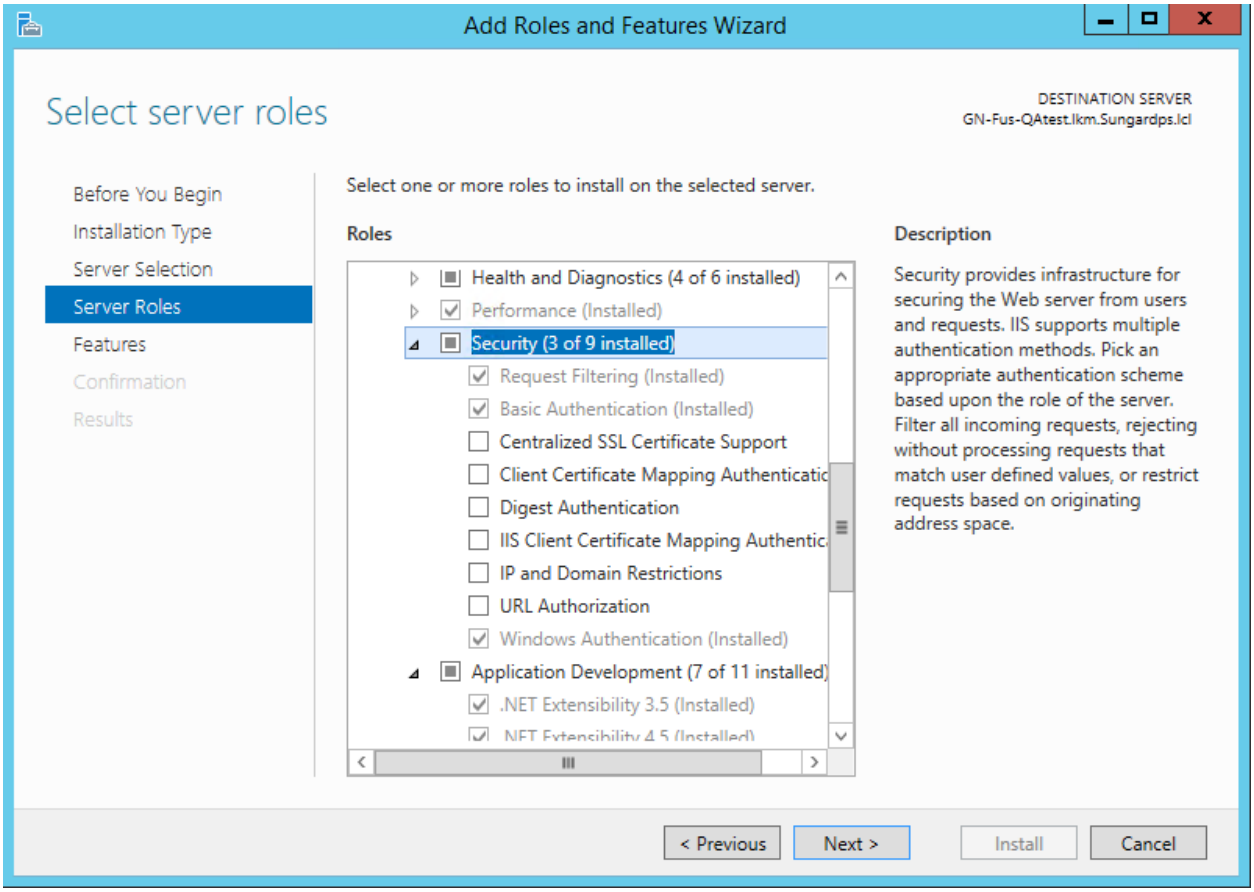
- Roles: Web Server (IIS) > Web Server > Health and Diagnostics
  - HTTP Logging
  - Logging Tools
  - Request Monitor
  - Tracing



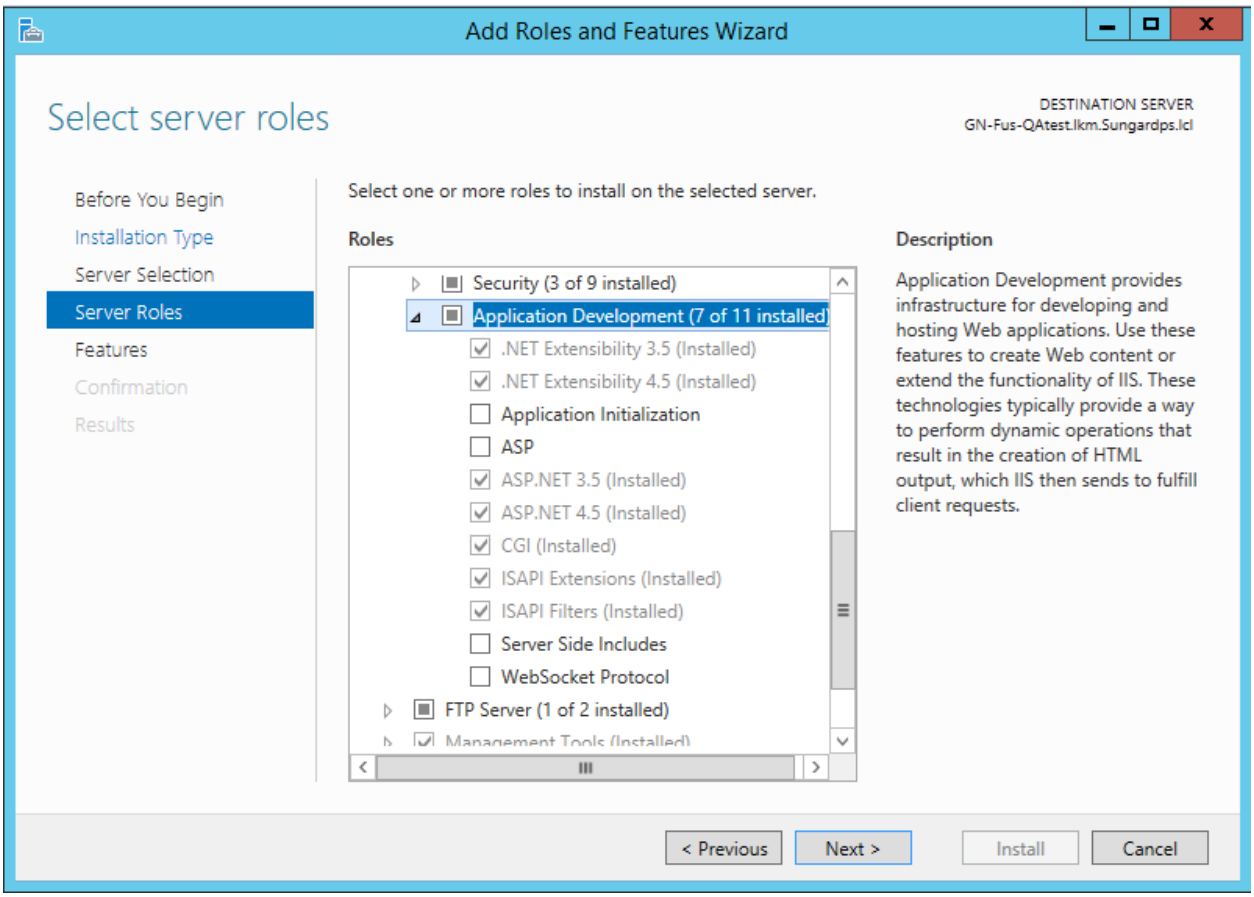
- Roles: Web Server (IIS) > Web Server > Performance
    - Static Content Compression
    - Dynamic Content Compression



- Roles: Web Server (IIS) > Web Server > Security
    - Request Filtering
    - Basic Authentication
    - Windows Authentication

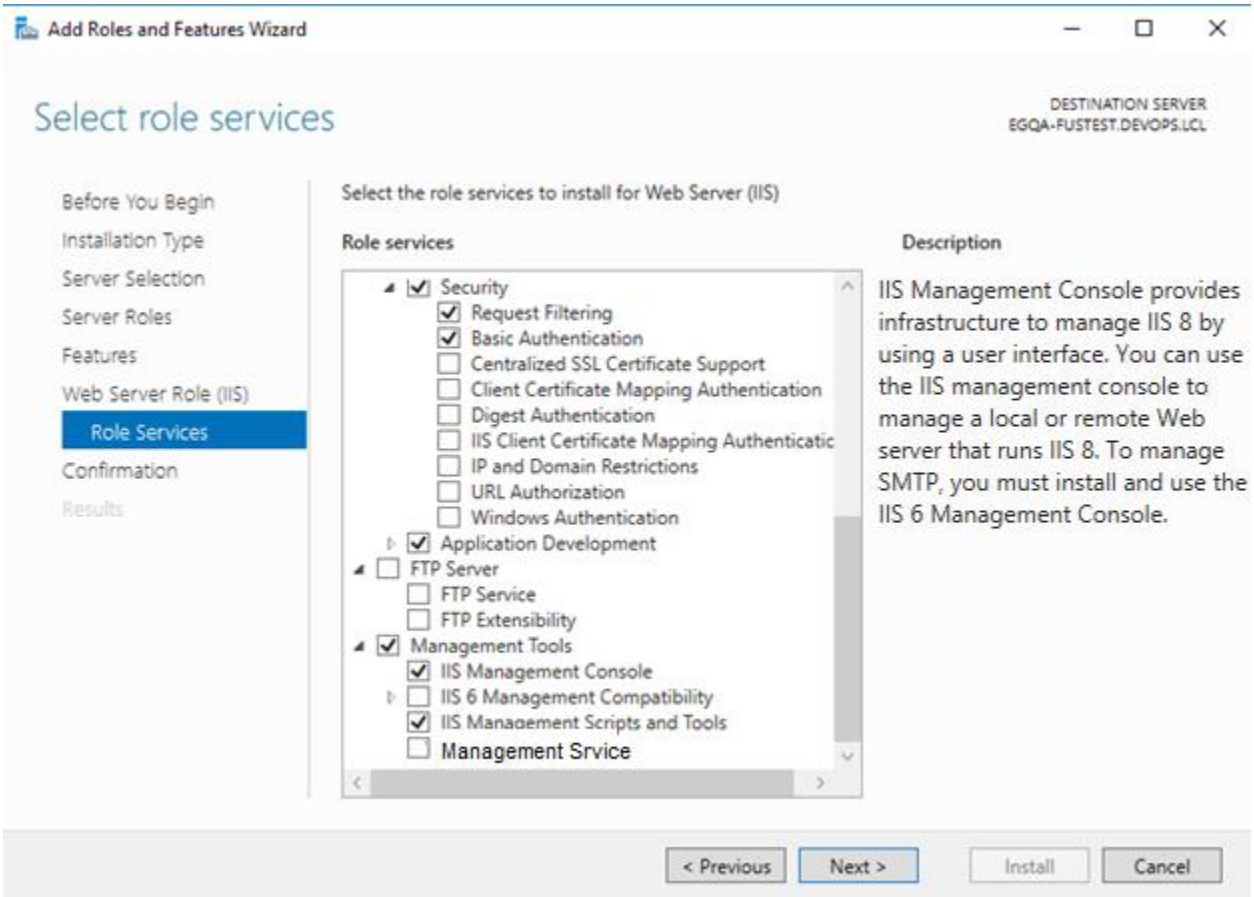


- Roles: Web Server (IIS) > Web Server > Application Development
  - .NET Extensibility 4.5
  - ASP.NET (Windows Server 2008)
  - ASP.NET 4.5 (Windows Server 2012)
  - Checking ASP.NET 4.5 will prompt to include the following pre-requisites
    - .NET Extensibility 4.5
    - ISAPI Extenstions
    - ISAPI Filters
  - CGI
  - ISAPI Extensions
  - ISAPI Filters

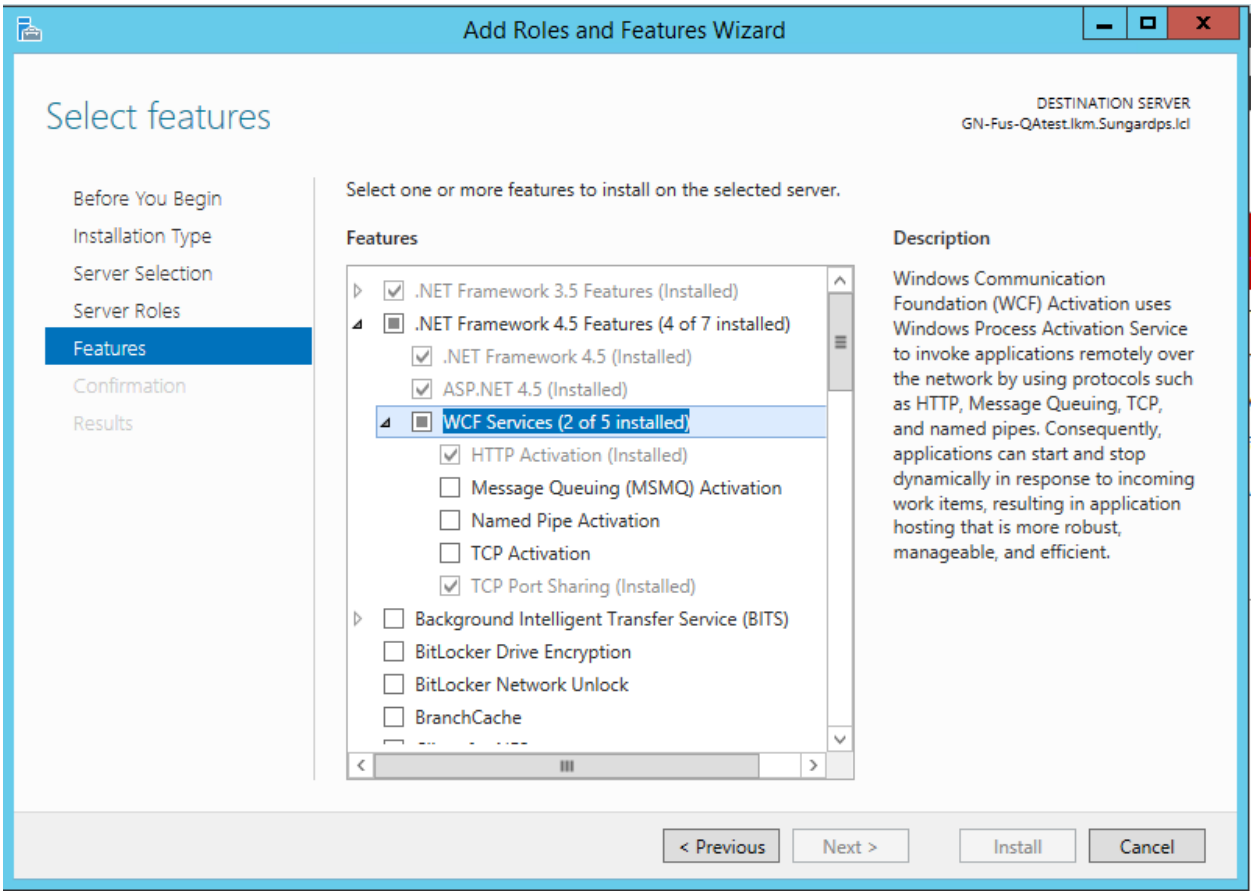


.NET Extensibility 3.5 and ASP.NET 3.5 are not required.

- Roles: Web Server (IIS) > Management Tools
    - IIS Management Console
    - IIS Management Scripts and Tools



- Features: .NET Framework 4.5 Features > WCF Services > HTTP Activation



Return to *Pre-Start Checklist*

WebDeploy must be installed

Web Deploy (msdeploy.exe) is used to deploy web applications to IIS. It is an IIS extension that is downloaded and installed separately. It should be located in one of the folders below if it is installed on your machine.

For Windows Server 2012

C:\Program Files\IIS\Microsoft Web Deploy V3\msdeploy.exe
C:\Program Files (x86)\IIS\Microsoft Web Deploy V3\ msdeploy.exe

If it is not installed follow the instructions for downloading and installing in the Appendix.

Appendix 1: Web Deploy installation for Windows 2012

Return to *Pre-Start Checklist*

Microsoft.NET Framework 4.0

Microsoft .NET Framework 4.0 is required for eBill presentment (CX) and permit printing (BP). It should already be included on Windows 8 or Windows 2012 servers, but it may need to be downloaded on earlier versions. You can download Microsoft .NET Framework 4.0 from the Microsoft Download Center: Microsoft .NET 4.0 Download

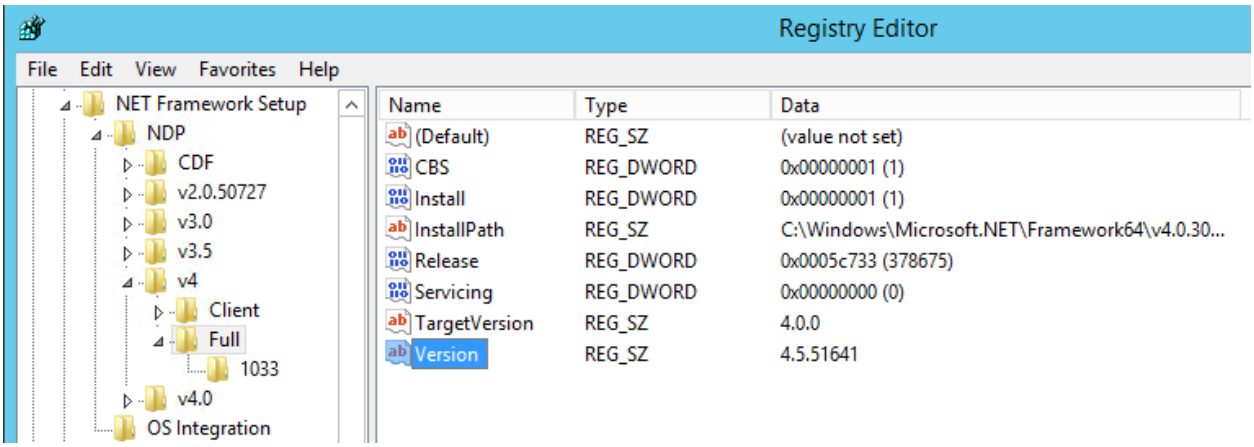
Microsoft.NET Framework 4.5

Microsoft .NET Framework 4.0 is required. It should already be included on Windows 8 or Windows 2012 servers, but it may need to be downloaded on earlier versions. You can download Microsoft .NET Framework 4.5.1 from the Microsoft Download Center: Microsoft .NET 4.5.1 Download

You can verify what .NET version you have installed by checking the registry key:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\net Framework Setup\NDP\v4\Full\Version

Any 4.5 version should be sufficient.



Return to *Pre-Start Checklist*

Firewall access

Clients will need to open the identified ports on their server. This is used by the applications to access the services over the internet.

Internet Ports:443

SSL Certificate

Click the link below for instructions on how to create a SSL Certificate for IIS.
http://www.iis.net/learn/manage/configuring-security/how-to-set-up-ssl-on-iis

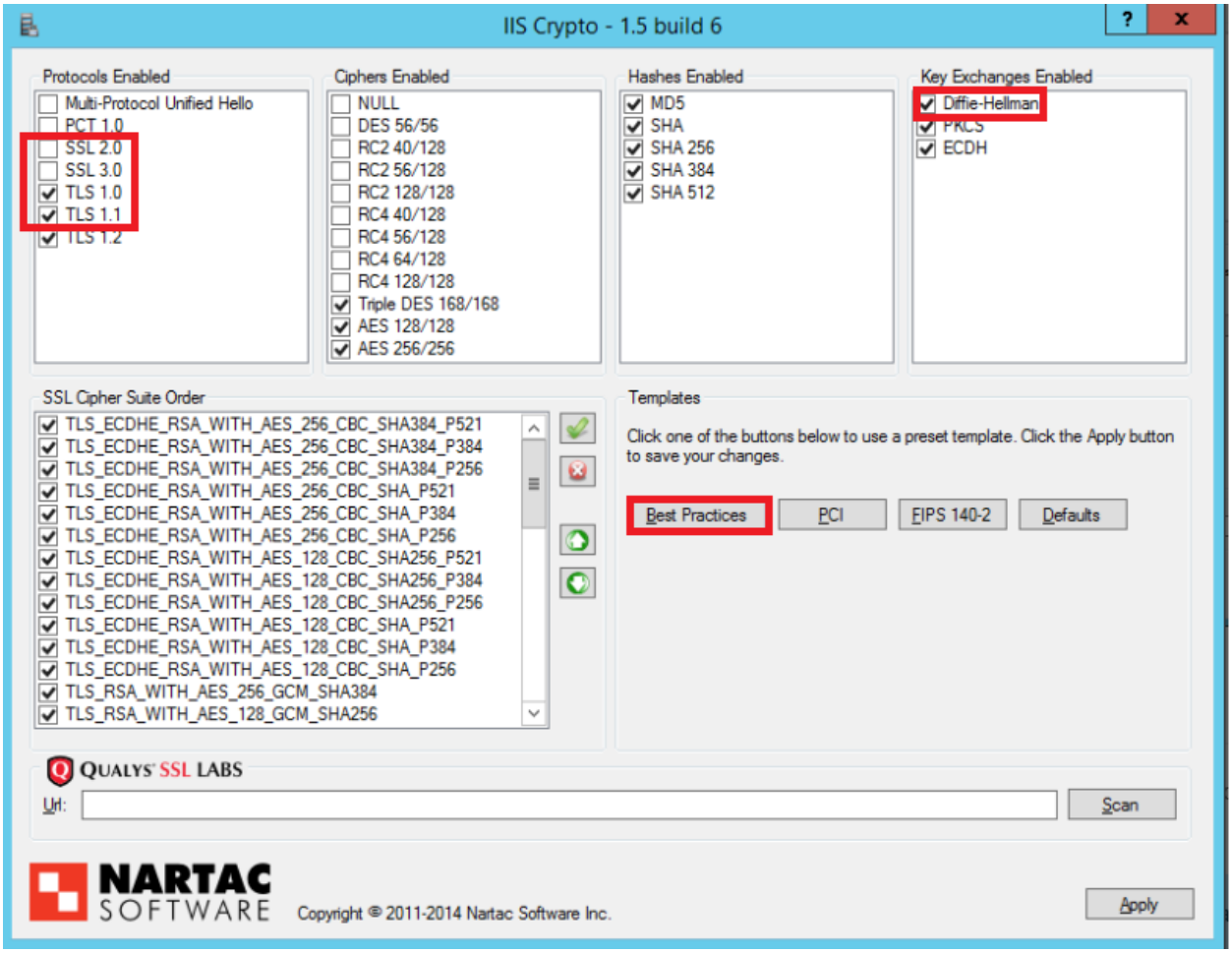
PCI compliance

For IIS to meet PCI compliance you will need to take the following steps.

Run IIS Crypto

The latest PCI security standards requires SSL v3 and TLS 1.0 protocols to not be used. IIS should be using TLS 1.2.
Download IIS Crypto from NarTac. It's a free download, (but we cannot endorse or support it).

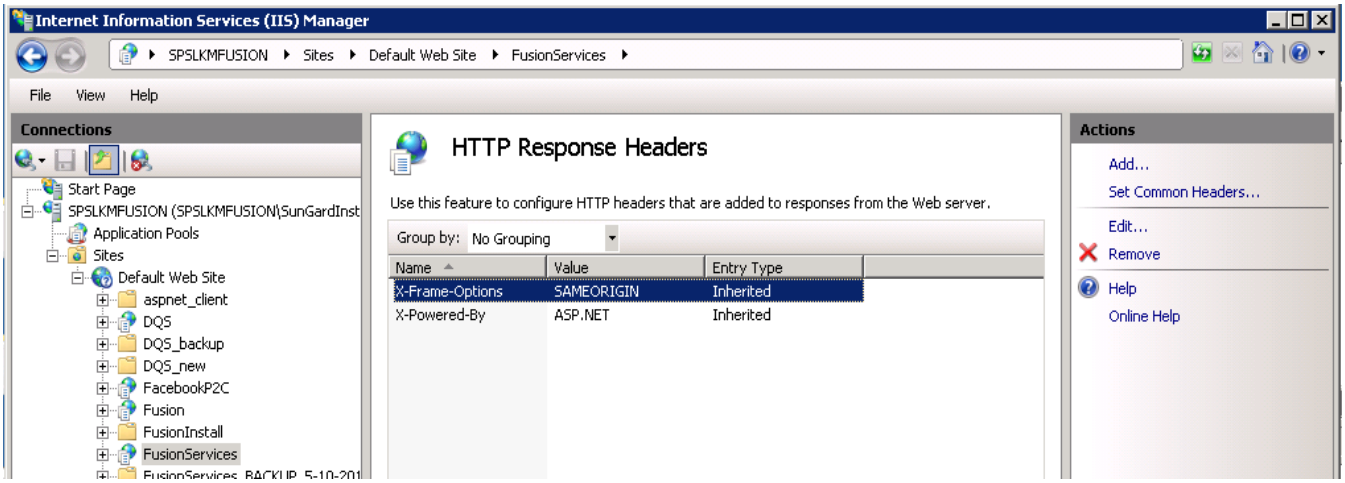
1. Select Best Practices
2. Disable DH
3. Disable all but TLS 1.2



Add X-Frame-Options

The X-Frame-Options header can be used to prevent framesniffing techniques. See https://support.microsoft.com/en-us/kb/2694329 for more information.

1. Open Internet Information Services **(IIS) Manager.**
2. In the **Connections** pane on the left side, expand the **Sites** folder and select **FusionServices**
3. Double-Click the **HTTP Response Headers** icon in the feature list in the middle.
4. In the **Actions** pane on the right side, click **Add**.
5. In the dialog box that appears, type **X-Frame-Options** in the Name field, and type **SAMEORIGIN** in the Value field.
6. Click **OK** to save your changes.



Return to *Pre-Start Checklist*

Installation Options

Click here: *To install for the first time*
Use this option if this is the first time you are installing Fusion on the server.

Click here: *To upgrade to a new version*
Use this option if you already have a version of Fusion installed, and you want to upgrade it to a new version.

Click here: *To change configuration information*
Use this option to change the configuration values after Fusion is already installed. I.e., changing the iSeries password or adding an AppID.

Click here: *To uninstall*
Use this option to uninstall and remove the FusionOS web service.

To install for the first time

If you are installing Fusion for the first time on the server, this section guides you through the steps required.

Install questions

The installer displays screens prompting you for the information you gathered in your Configuration Checklist. This section guides you through the screens and instructs you about how to provide the required information.

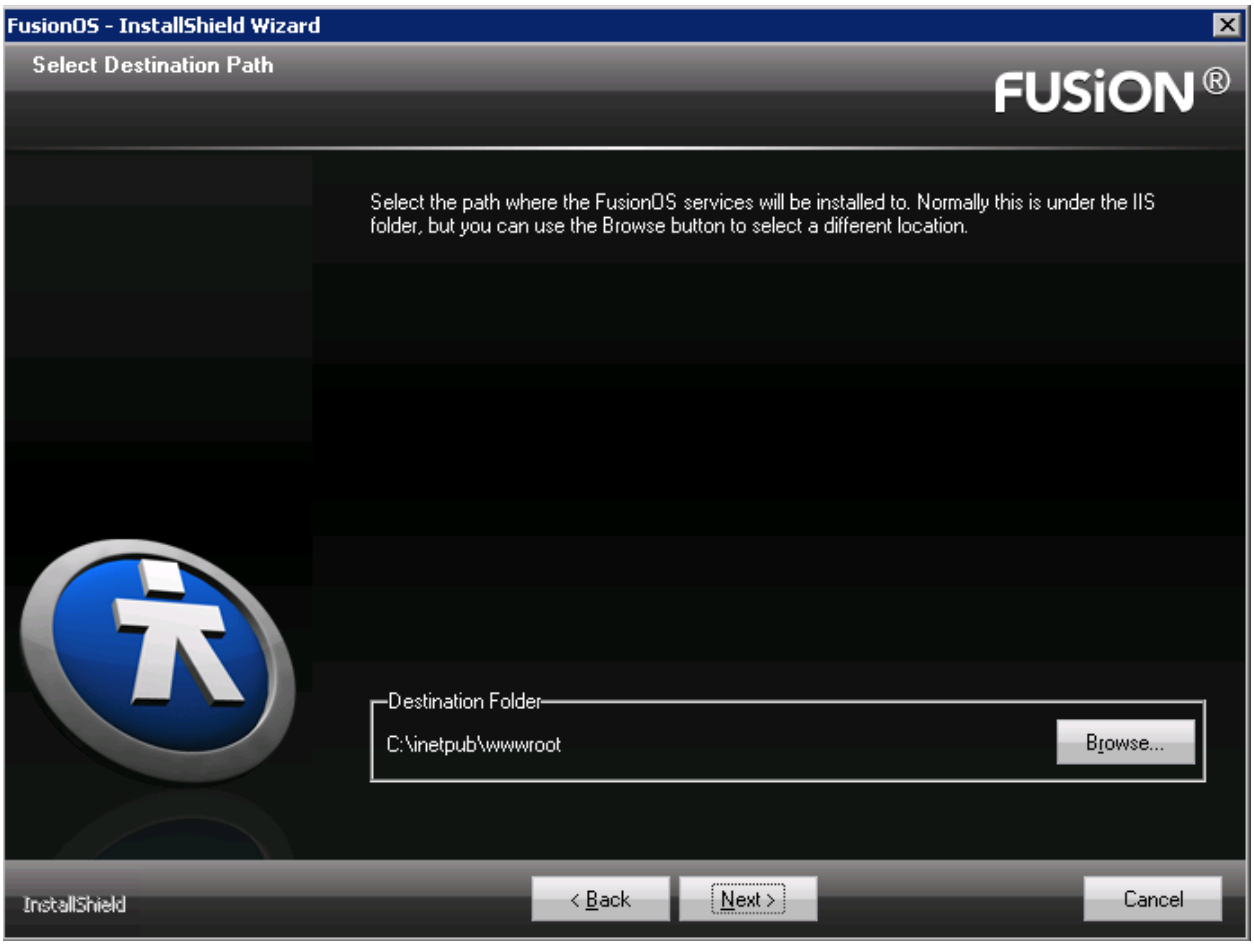
Welcome

This screen states general information and requirements about the installer. See the section Pre-Start Checklist for information about installing the prerequisites. When you click Next, the installer verifies that the prerequisites are installed. Click the **Instructions** button to display the installation instructions where you will find a list of the prerequisites and instructions on how to install them.

FusionOS - InstallShield Wizard
Welcome to the InstallShield Wizard for FusionOS
FUSiON®
FusionOS version 3.0.2030 will be installed on your computer.
To continue, click Next.
Prerequisites:
-- Windows 2012 Server with IIS8 Manager
-- WebDeploy tool must be installed
-- .NET Framework 4.0 must be installed.
-- .NET Framework 4.5 must be installed.
Click the Instructions button below to view the installation guide.
Instructions
InstallShield
< Back
Next >
Cancel

Destination Folder

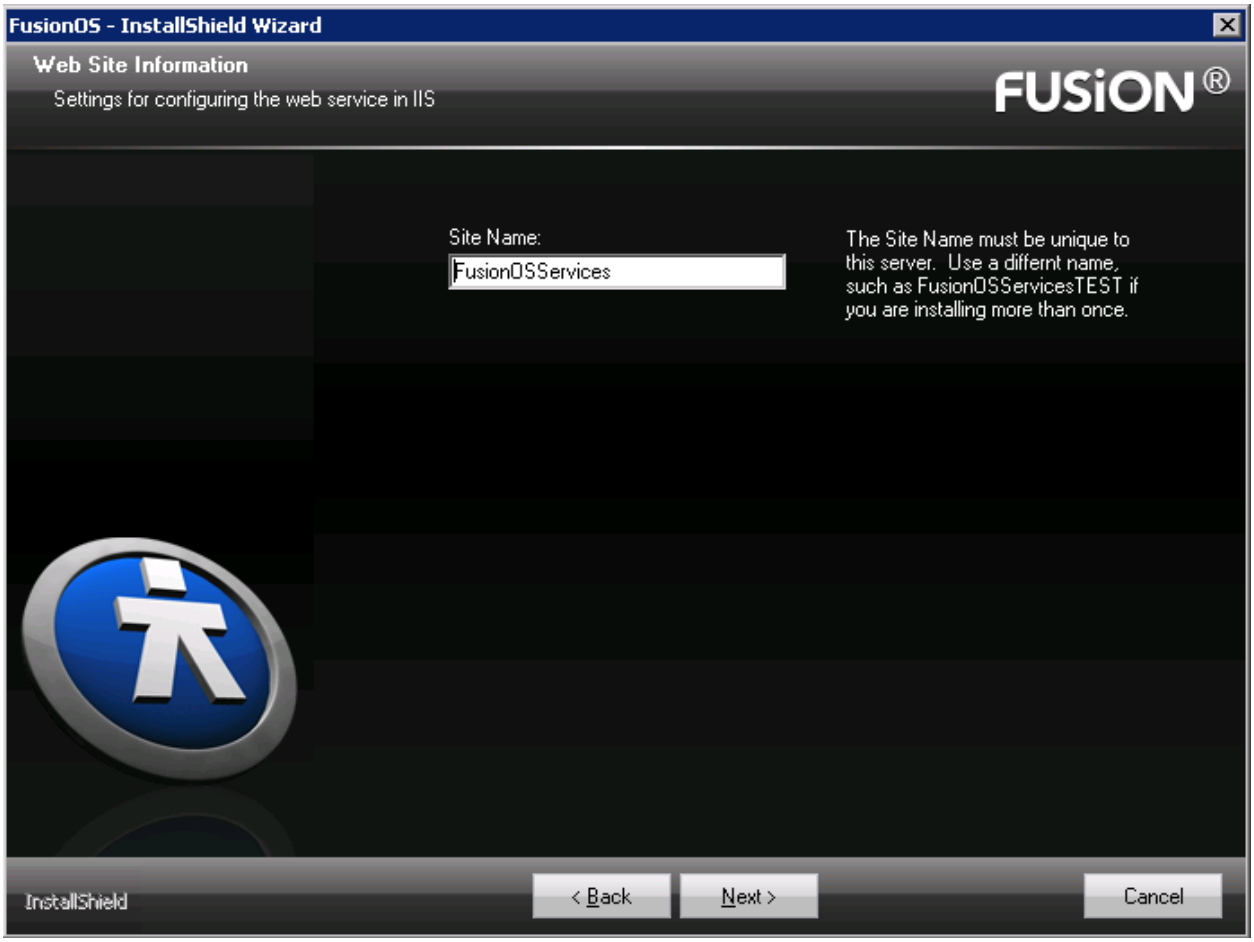
Select the directory to install the Fusion services to. By default, this is your IIS folder, C:\inetpub\wwwroot. You can change it to install to a different location if you prefer. The install will create a folder under the selected folder where the service files will be installed.



Site Name

Enter a name for the Fusion services. By default, this is FusionOSServices.

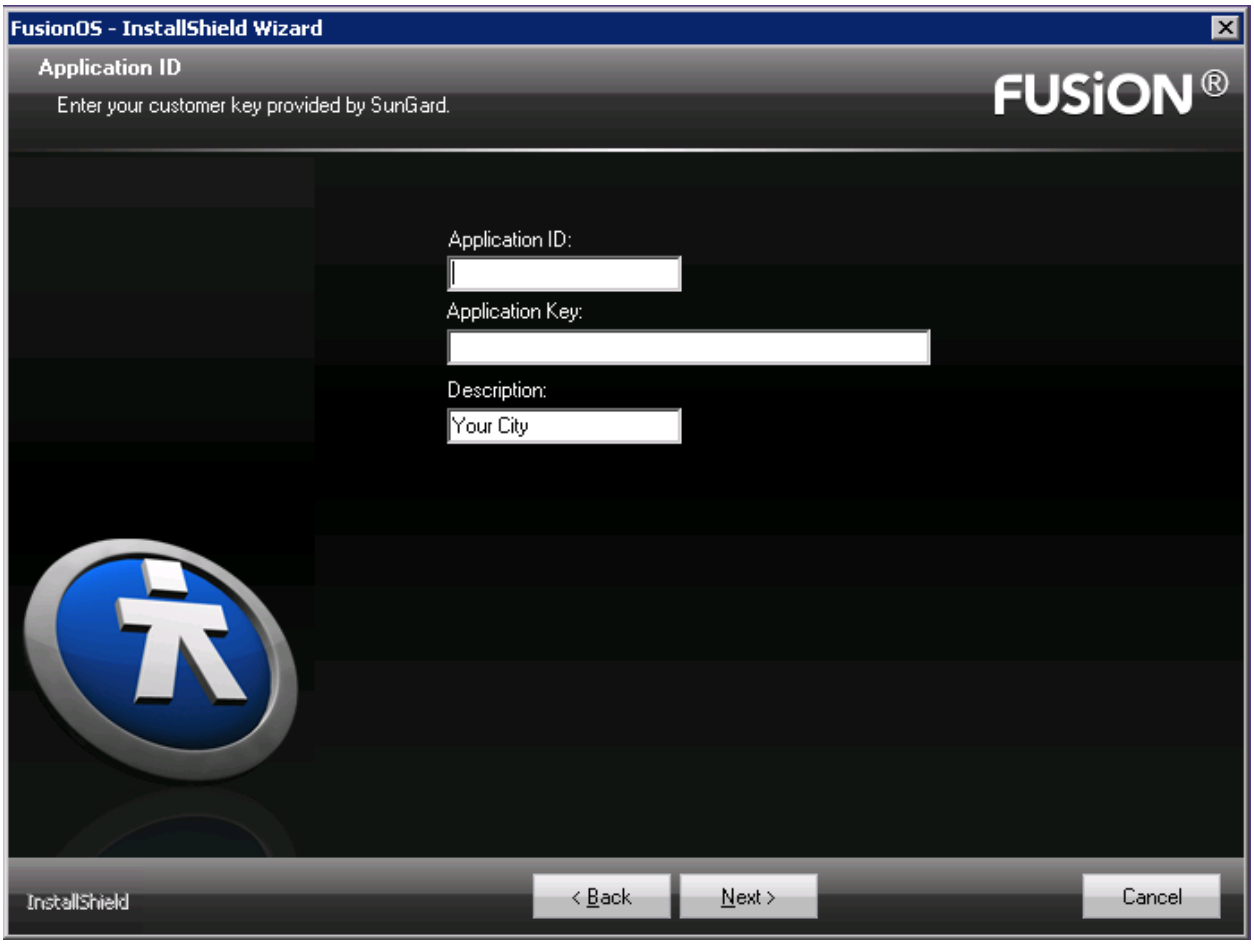
You can have more than one copy of the Fusion service on a machine. Each is identified by the **Site Name**. For example, you could install a second copy of Fusion for your test environment and call it FusionOSTest.



Application ID

An **Application ID** and **Application Key** will be provided to you when you purchase Fusion through SunGard. This information is from item 1 in your Configuration Checklist. Both fields are required.

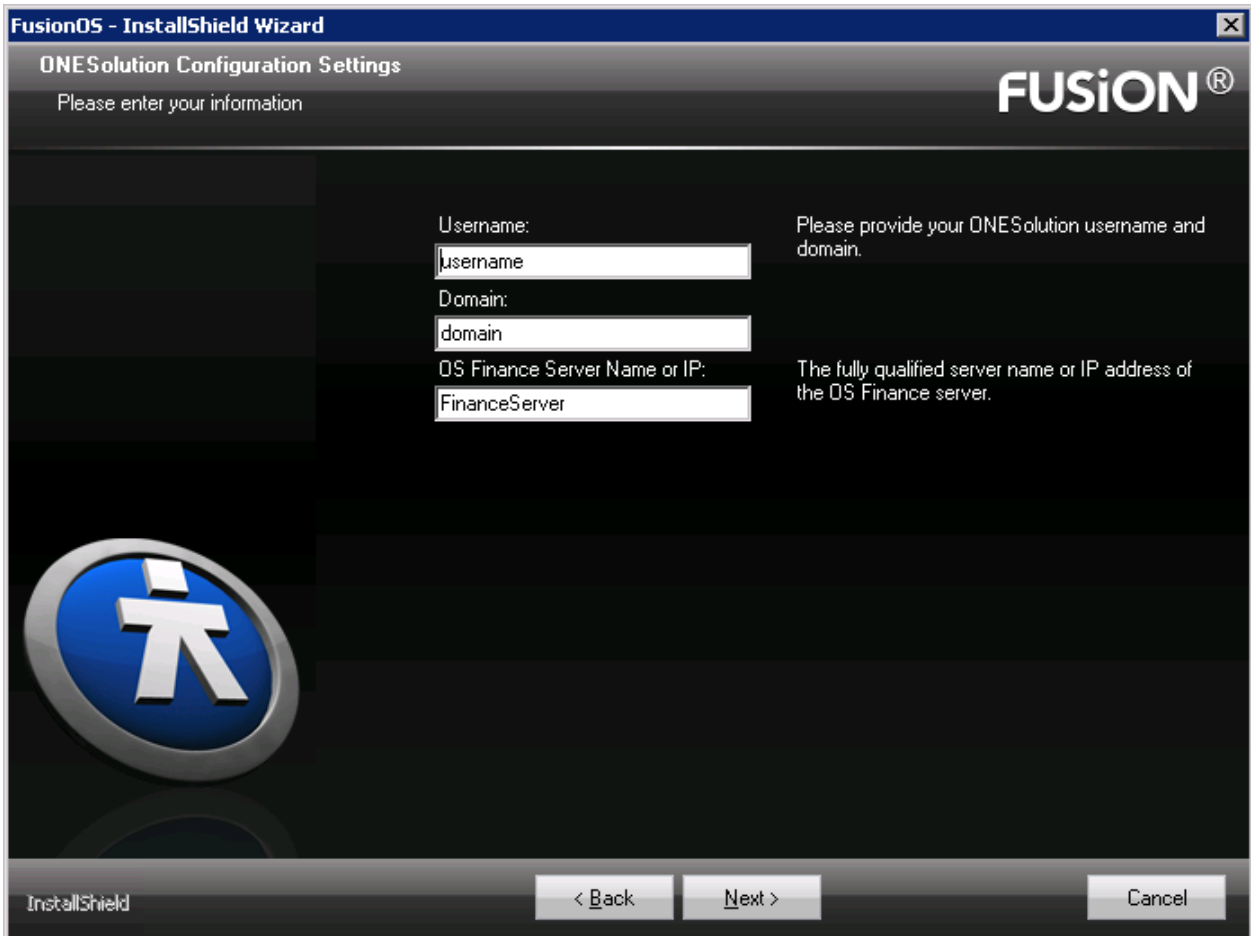
Description indicates the owner of the license.



Configuration Settings

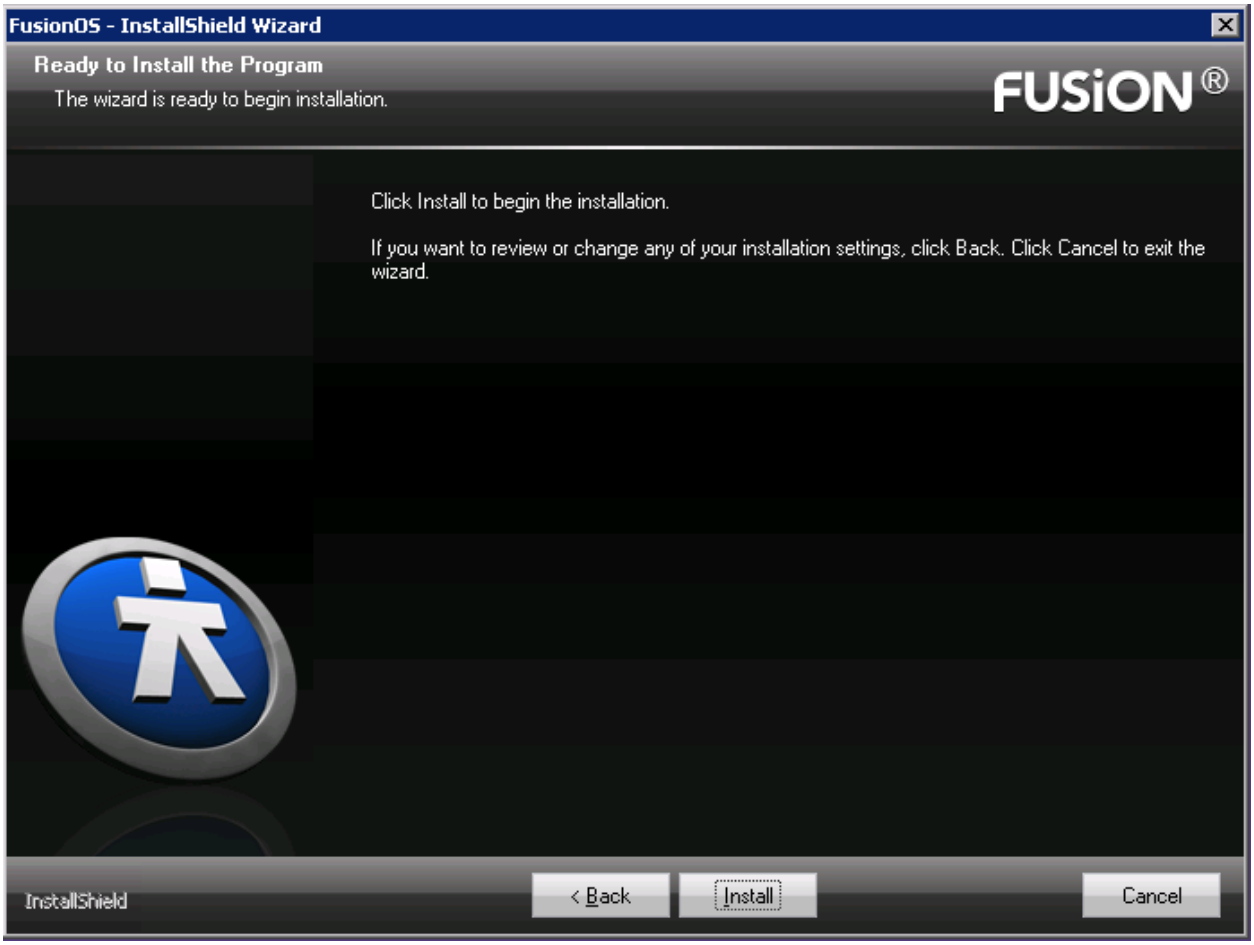
Enter the ONESolution information from item 3 in your Configuration Checklist. This information is used to configure the Fusion services to communicate with the ONESolution Finance Server. All fields are required.

You will need the **Domain\Username** of a user that has been granted permissions in SPSOne Server Manager.



Click **Next** to continue.

Ready to Install



Click **Next** to start the installation. Follow the link to guide you to the next instructions.

Installing Files

To upgrade to a new version

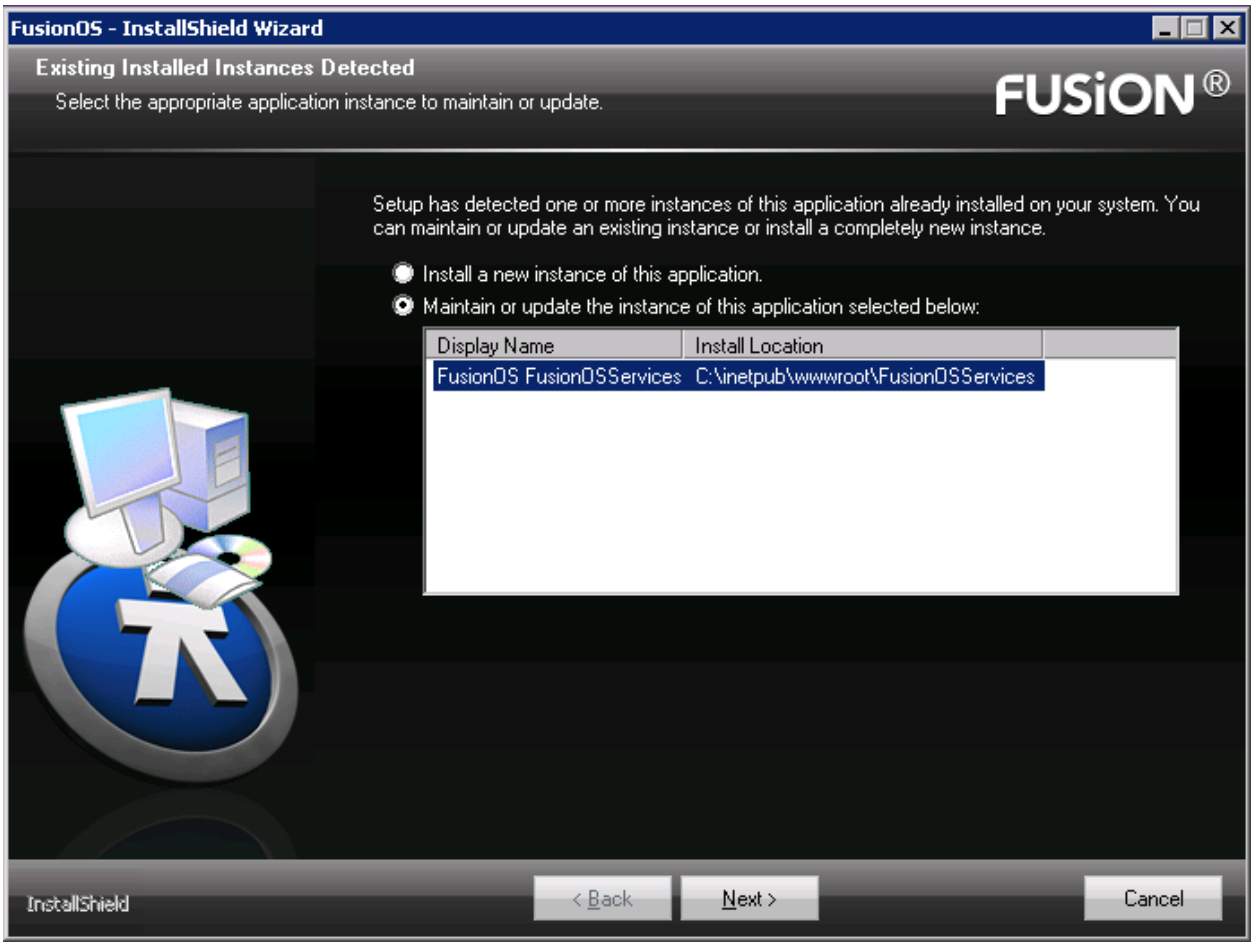
If you are running the install in order to upgrade Fusion to the latest version, this section guides you through the steps required.

Install questions

The installer displays screens to indicate it is upgrading to a new version. It does not allow you to change any of the configuration during update mode.

Multi-Instance Screen

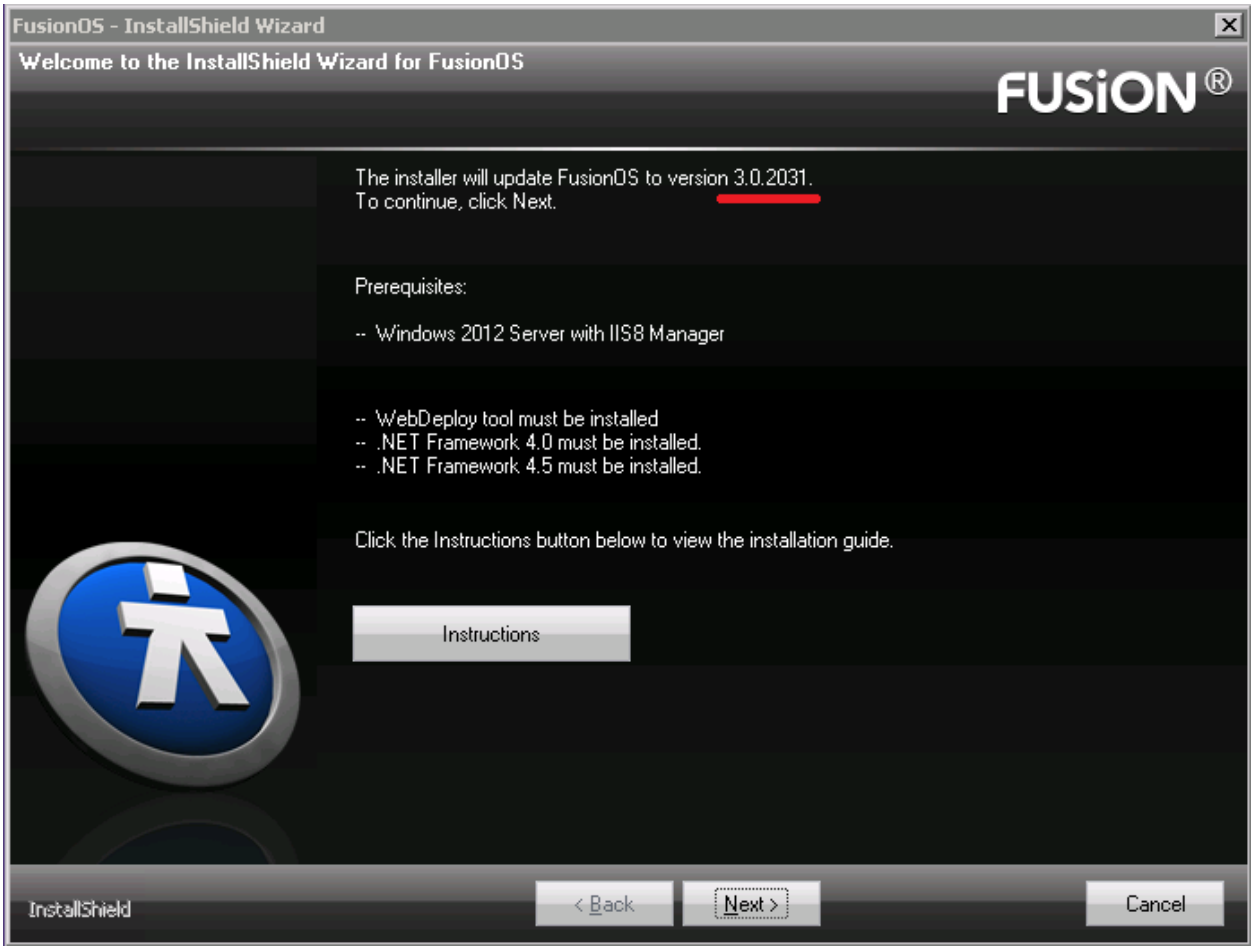
The installation will first display the instance selection dialog shown below.



Choose the **Maintain or update the instance of this application selected below** radio button. Then select the Fusion application with the Site Name you want to update.

Welcome

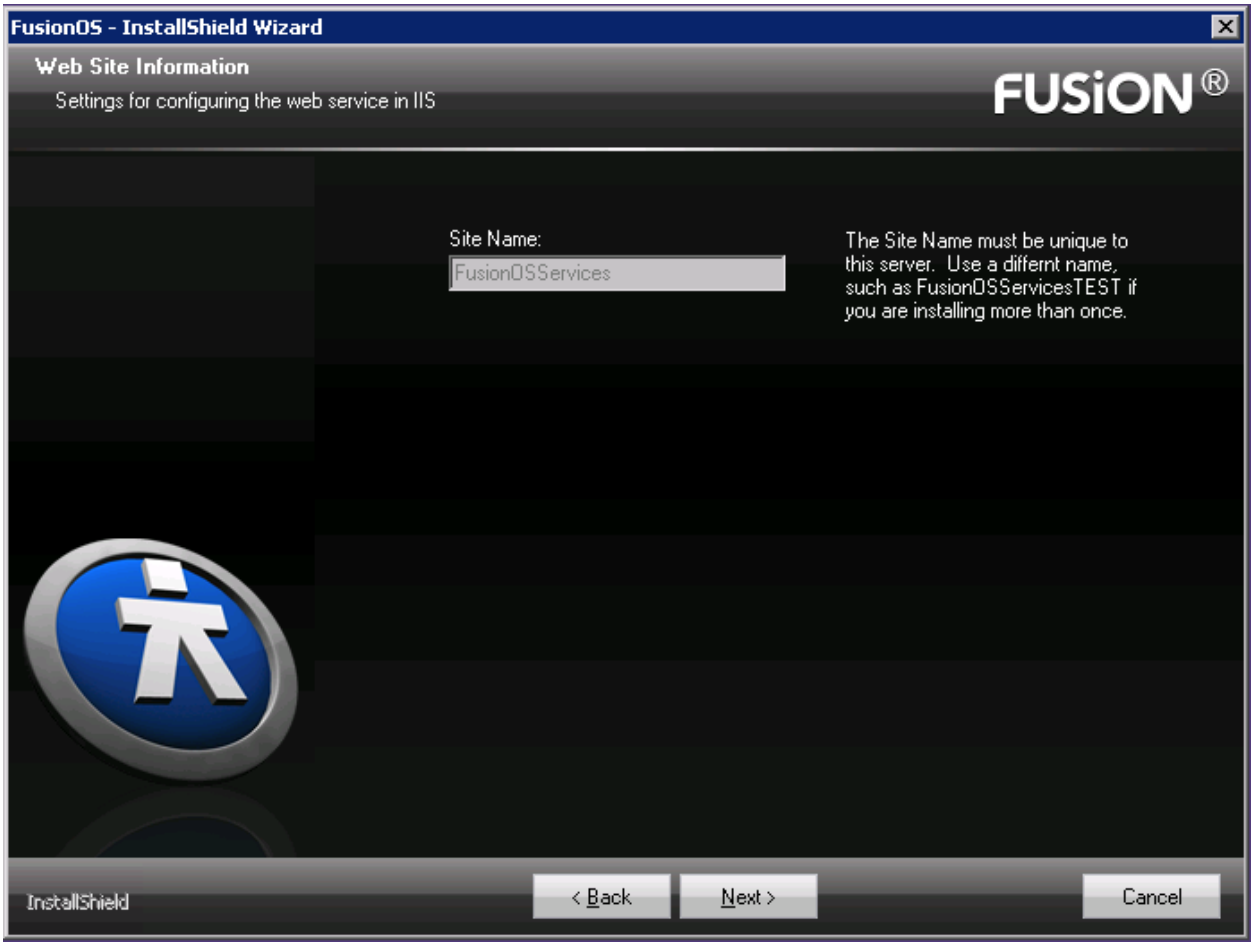
This screen simply states that it will update Fusion and show the version being upgraded to.



Click **Next** to start the installation. Follow the link to guide you to the next instructions.

Site Information

Confirm that the **Site Name** is the correct one for the site you are trying to upgrade.



Click **Next** to start the installation. Follow the link to guide you to the next instructions.

Installing Files

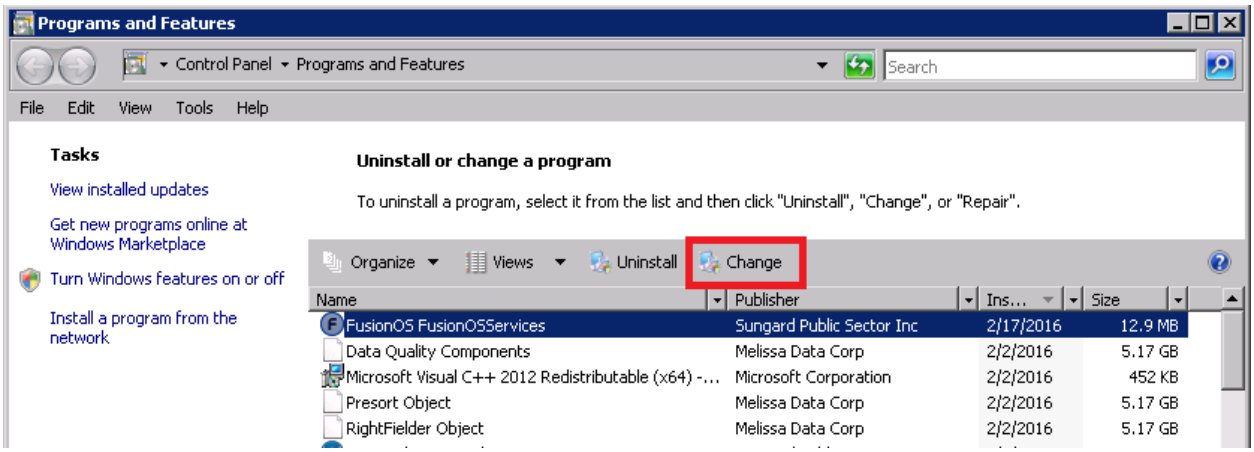
To change configuration information

If you need to change any of the configuration values from the Configuration Checklist such as changing the ONESolution domain\user, this section guides you through the steps required.

Starting the installer

You do not need the Fusion install package available to change the applications. Simply go to the **Programs and Features** option in Windows Control Panel. On the Windows **Start** menu, select **Control Panel**. Then select **Programs and Features.**

In the Programs and Features window, select the Fusion application, then click **Change**. This starts the installer.

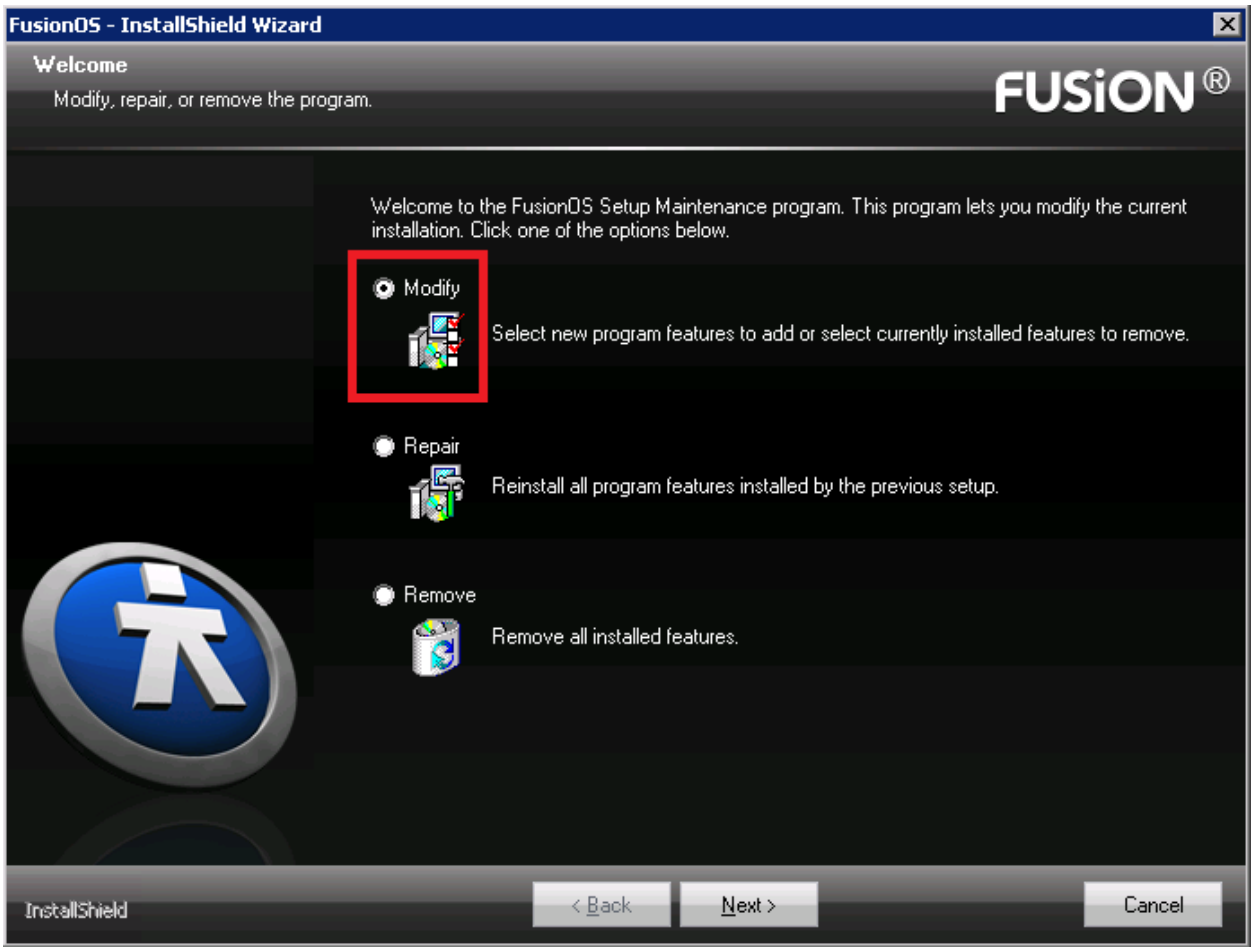


Install Questions

The installer displays screens prompting you for the information you gathered in your Configuration Checklist. This section guides you through the screens presented and instructs you about how to provide the required information.

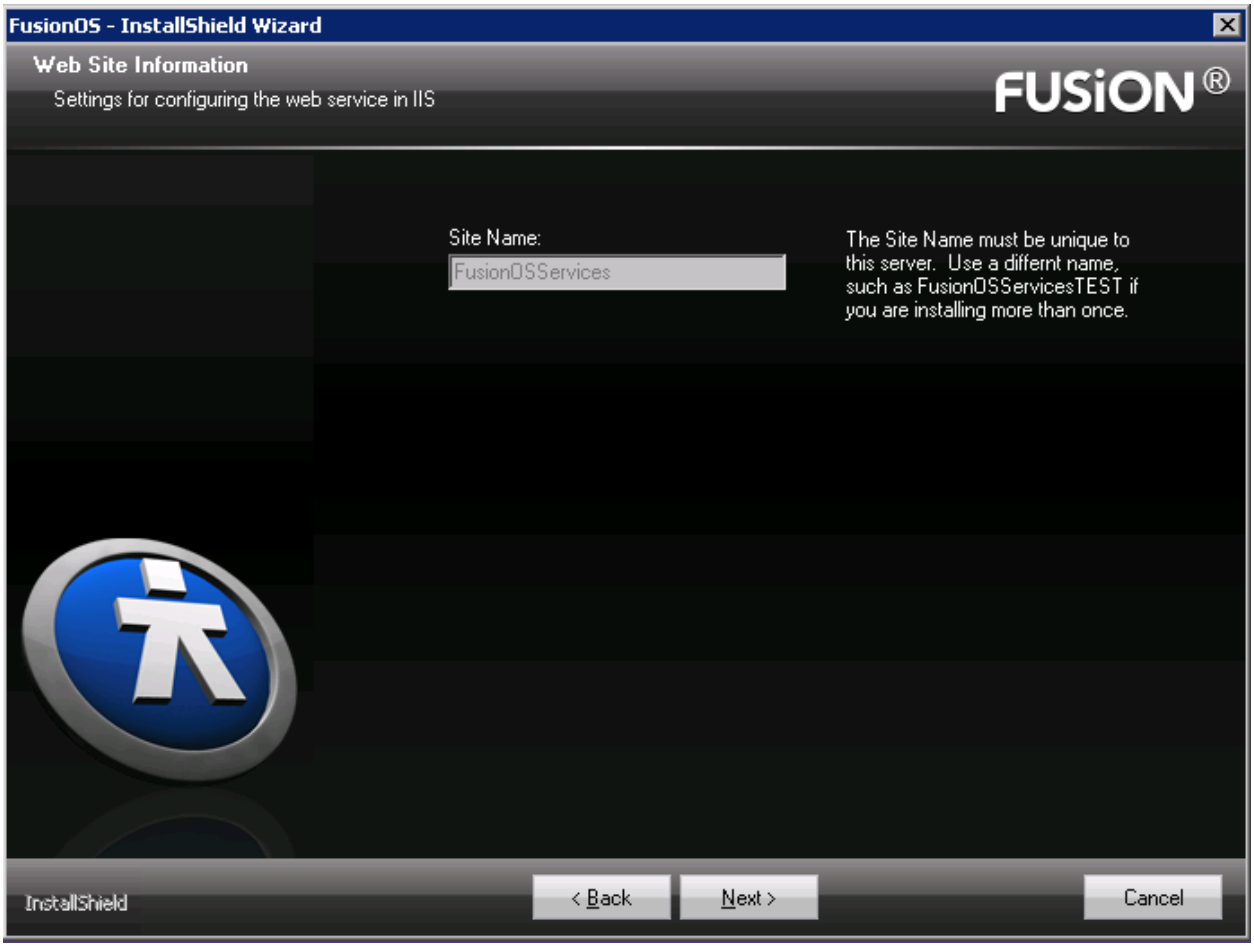
Modify / Repair / Remove

The Modify / Repair / Remove screen displays first and asks you which of these options you want to do. Choose the first option, **Modify,** to change the configuration values for the currently installed applications.



Site Information

Confirm that the **Site Name** is the correct one for the site you are trying to change.



Click **Next** to continue.

Application ID

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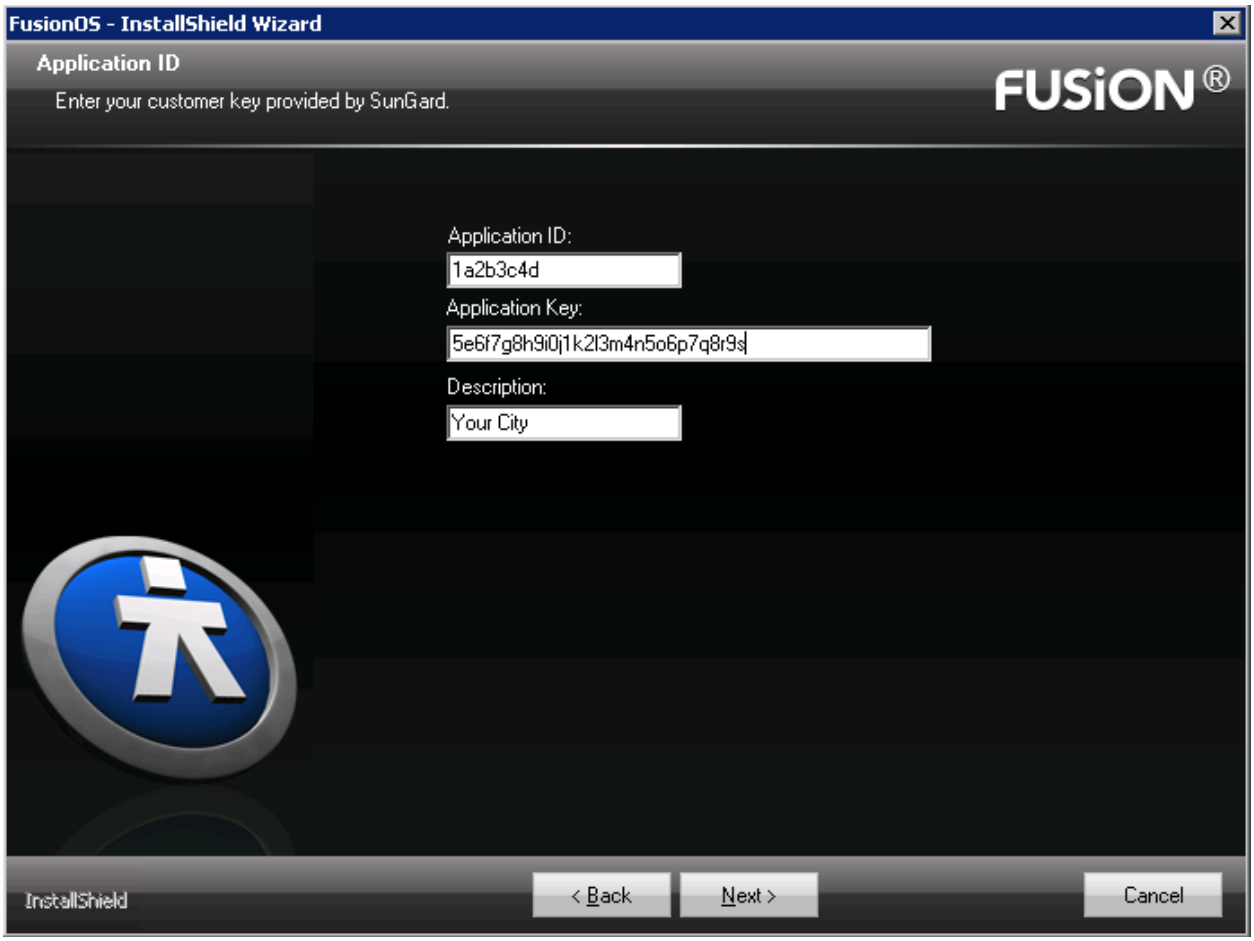
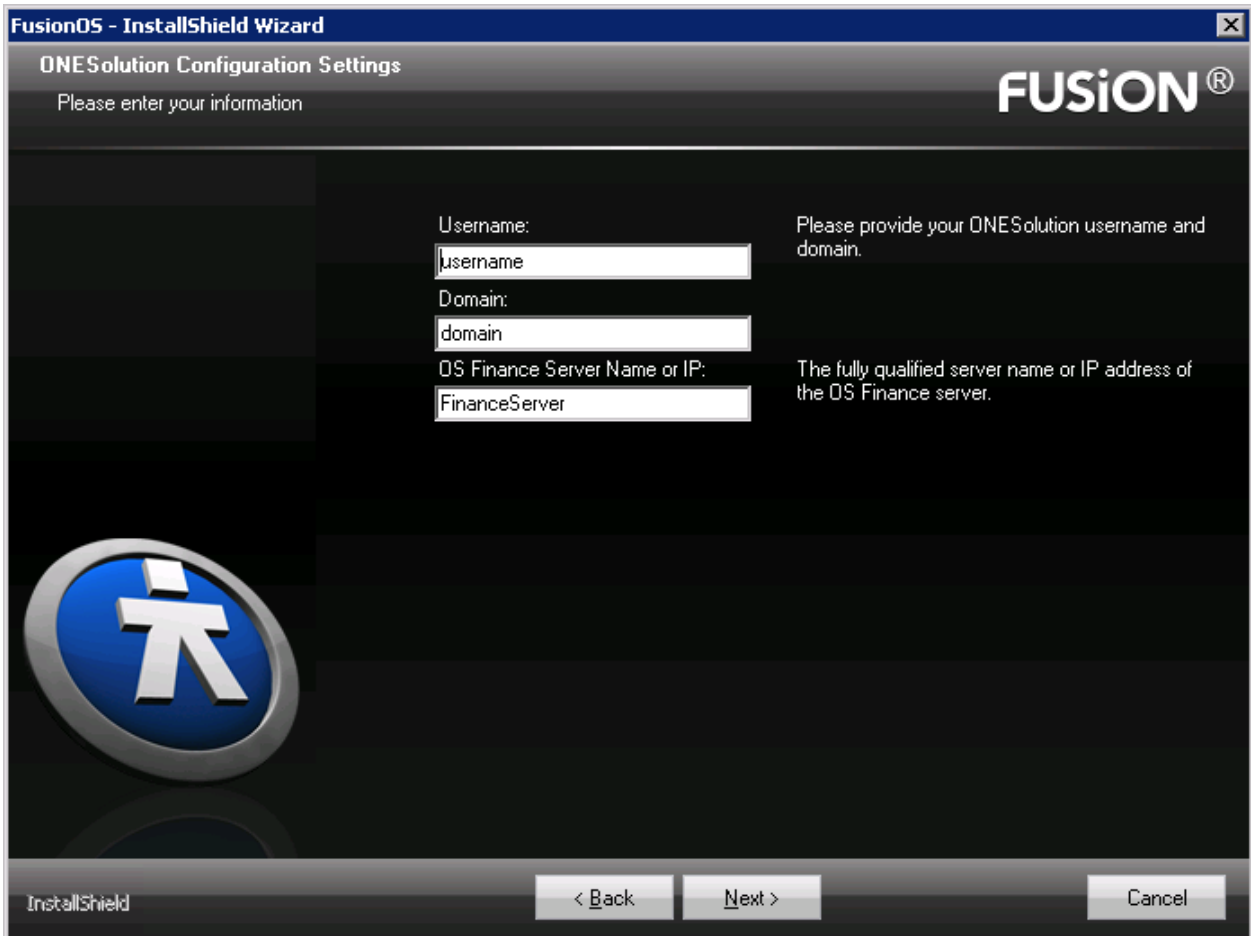
Description indicates the owner of the license.



Configuration Settings

Enter the ONESolution information from item 3 in your Configuration Checklist. This information is used to configure the Fusion services to communicate with the ONESolution Finance Server. All fields are required.

You will need the **Domain\Username** of a user that has been granted permissions in SPSOne Server Manager.



Click **Next** to start the installation. Follow the link to guide you to the next instructions.

Installing Files

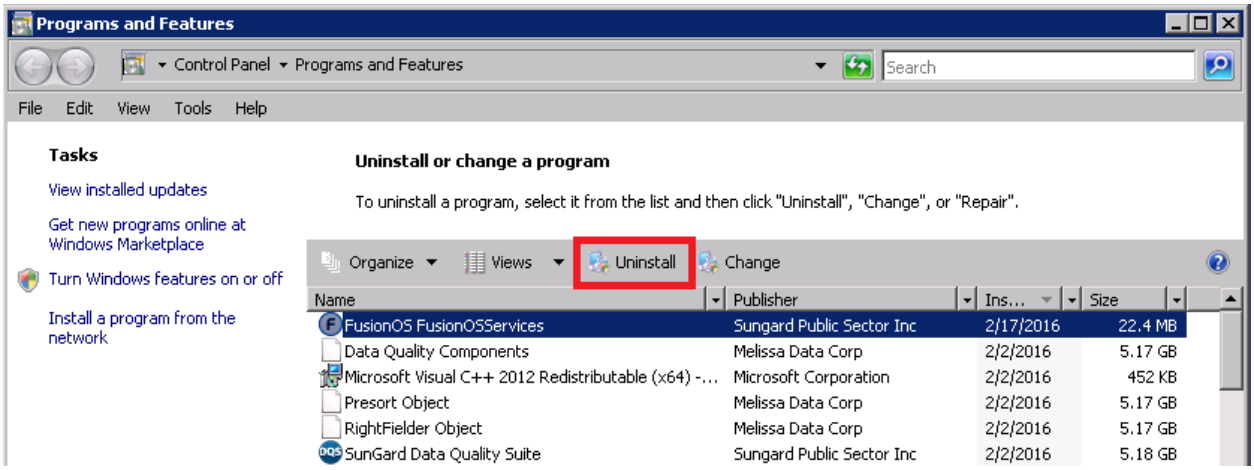
To uninstall

If you want to uninstall the Fusion services, this section guides you through the steps required.

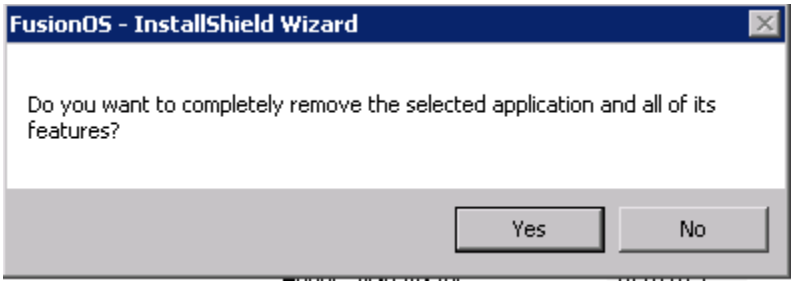
Starting the installer

You do not need the Fusion install package to change the applications. Simply go to the **Programs and Features** option in Windows Control Panel. On the Windows **Start** menu, select **Control Panel**. Then select **Programs and Features.**

In the Programs and Features window, select the Fusion application, then click **Uninstall**. This starts the installer.



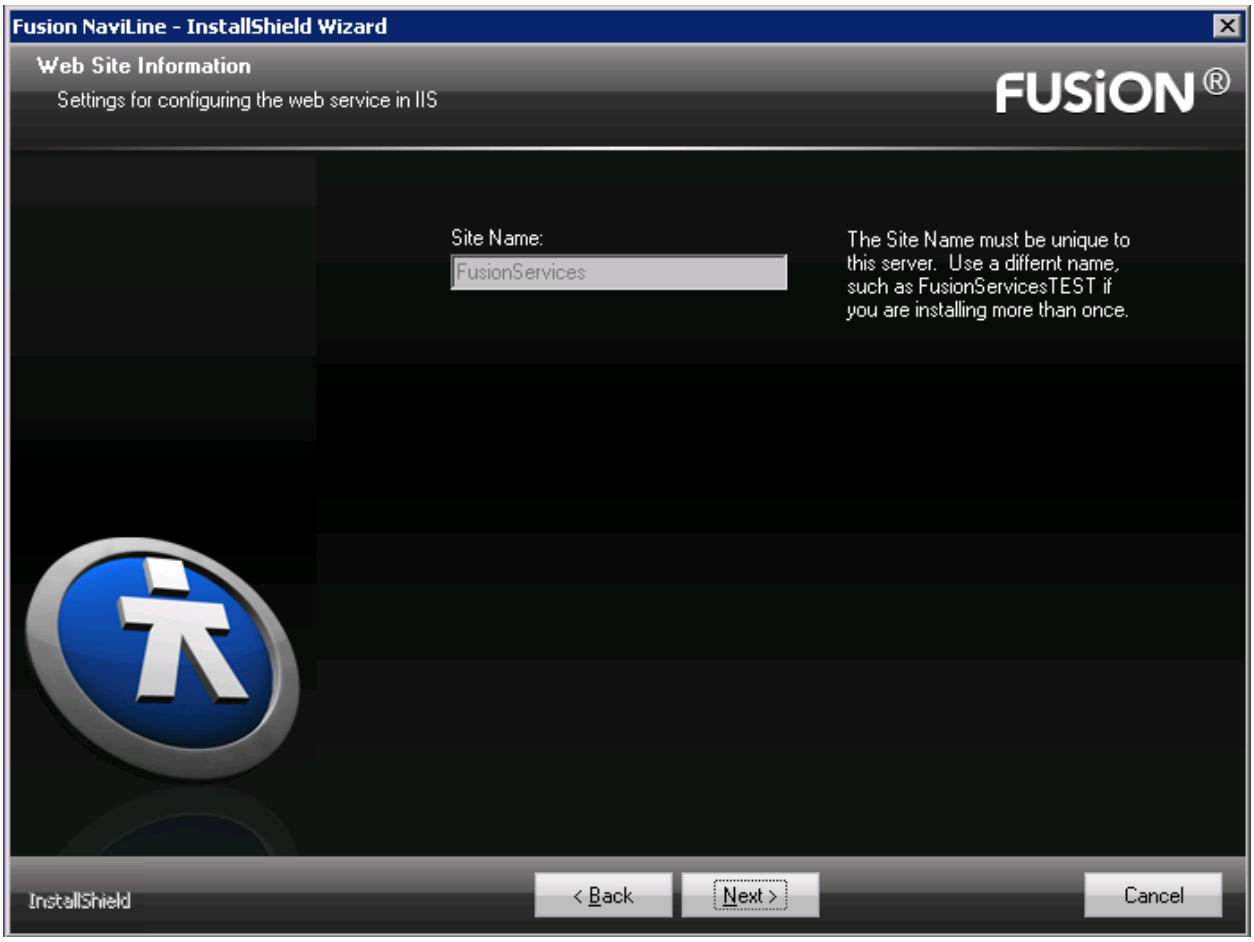
Click **Yes** to confirm that you want to uninstall Fusion.



Install Questions

Site Information

Confirm that the **Site Name** is the correct one for the site you are trying to remove.



Click **Next** to continue.

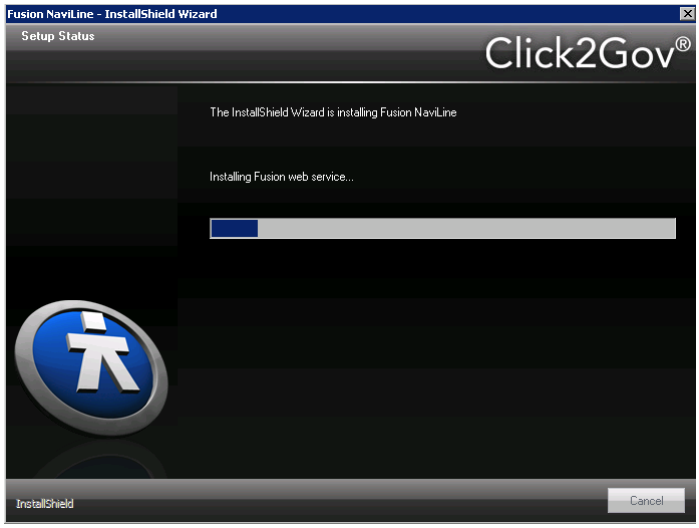
The installer will immediately begin the uninstalling after you click Yes to confirm. It will show the progress as it is uninstalling the files.

Installing Files

Installing Files

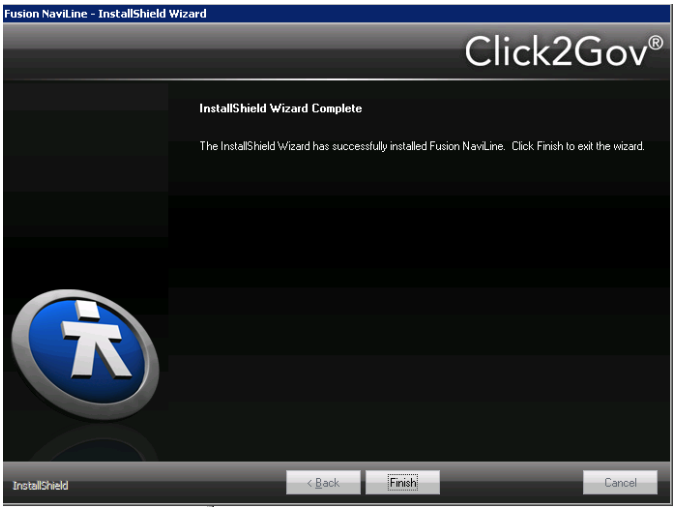
Installation

The installer will deploy the latest Fusion service files to IIS, then set the configuration values. If this is an upgrade or maintenance, then it will back up the previous files before making any changes. The installer displays what it's doing above the status bar. This should only take a few minutes.



Complete

This screen displays once the installer has completed installation and configuration.



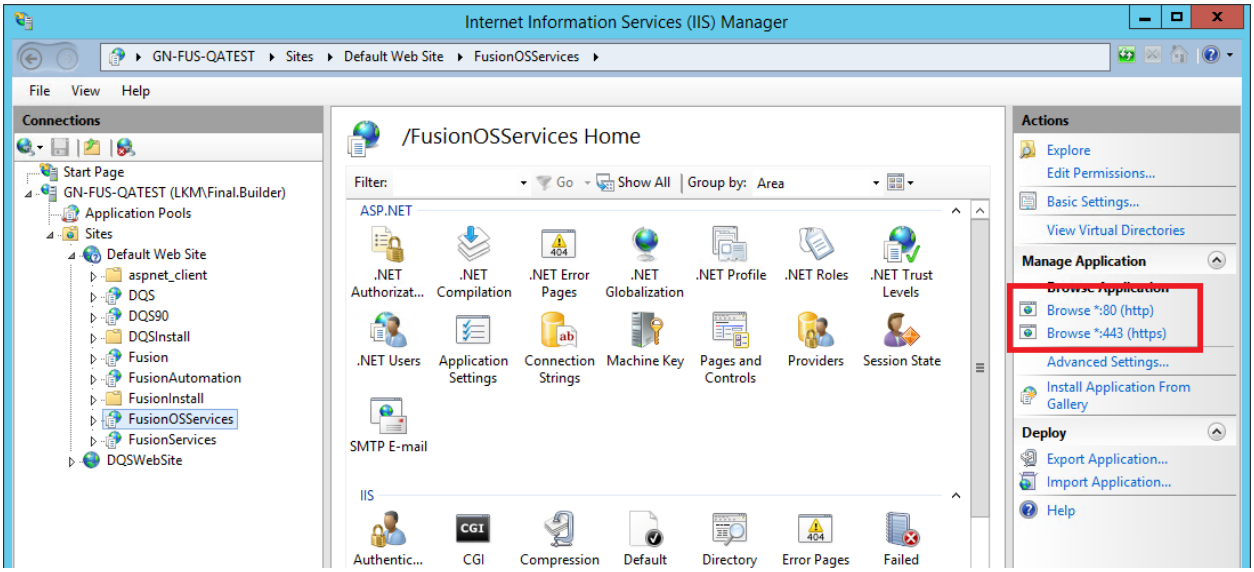
Click **Finish** to end the installation. Follow the link to guide you to the post-install instructions.

After installing

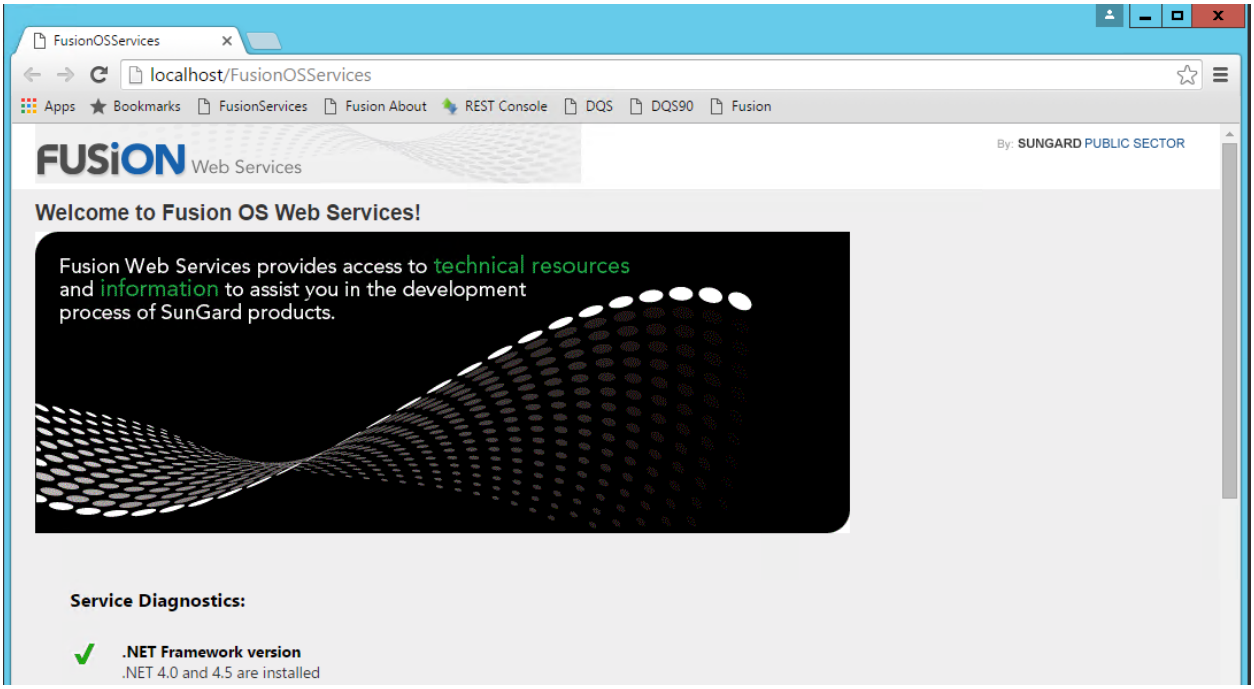
Verify the Fusion service

You can test that the Fusion service is installed by browsing it through IIS.

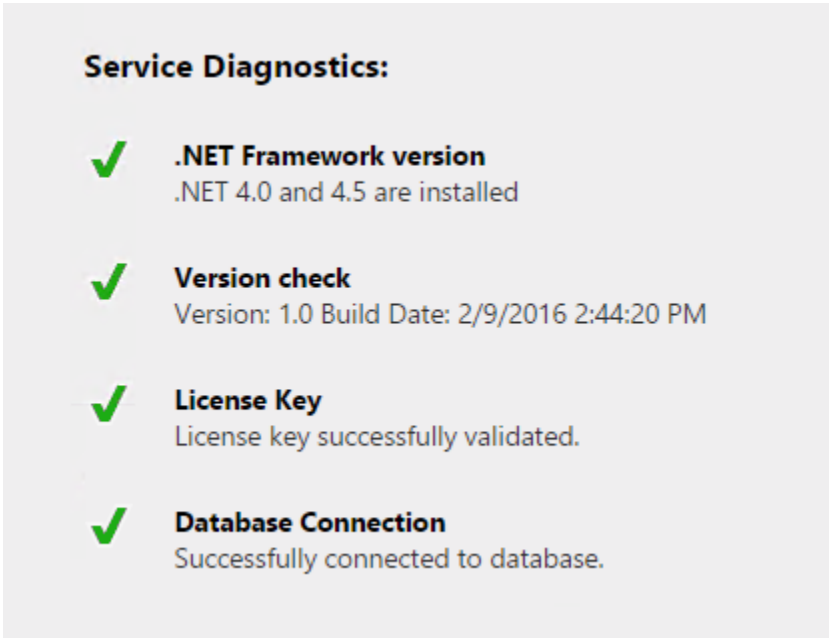
In IIS, select **FusionOSServices** under **Default Web Site**, and click **Browse** to browse the application using either http or https.



This should bring up the Fusion Web Services page.



Under the logo, there is a Service Diagnostics section. This page runs some basic diagnostic test to verify that the pre-requisites are installed, and the configuration information is correct. If any of these show an error, review the configuration information you entered during the install, or see the *Error! Reference source not found.* section for how to install missing prerequisites.



Verify the SSL certificate

You can aslo test that the Fusion service is able to respond through the https URL by entering the URL below into an IE browser:

https://servername:443/FusionOSServices

Verify the services are responding

To verify and test that the Fusion services are responding, use the REST Console Extension.

REST Console Extension

This is a free web application available in Google Chrome that you can Download and use to test sending the service calls and see the JSON output that the services return.

The application presents a page that allows you to enter information that would normally be sent as part of the JSON request. The sections you will need to fill in values for are explained below.

Target

In the **Target** section, you will fill in the URI for the service, and selecting either GET or POST as the Request method. The URL for each service is found in the **Example** section for the method on the Fusion documentation site http://fusion.superion.com/Fusion/. It also indicates if it is a GET or POST method.

From Fusion documentation:

Method PostKeyLookup

Type: FusionOSServices.Controllers.AccountLookupController

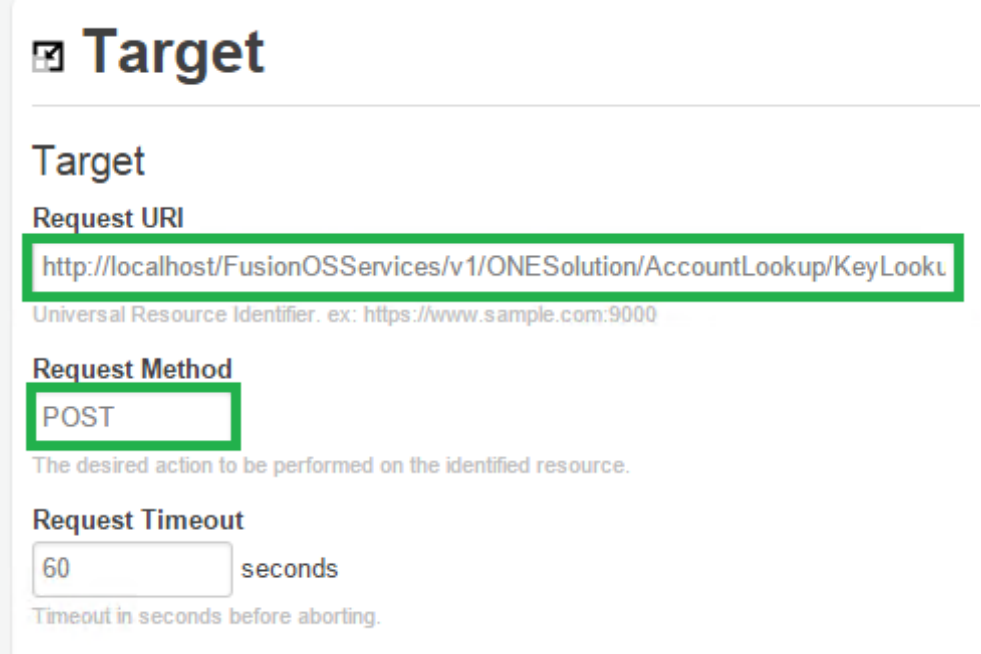
Summary

Lookup a key in the ledger

Example

POST http://localhost/FusionOSServices/v1/ONESolution/AccountLookup/KeyLookup

In the REST Target:

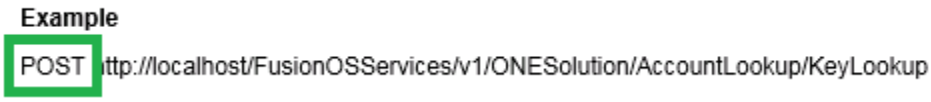


Request URI

In the **Target** section, enter the URL into the **Request URI** field. Some of the service methods require values, such as account numbers, to be entered as part of the URL. If so, make sure the values are valid for your database, and that they are entered in the proper order.

Request Method

Select either **GET** or **POST**. The example in the Fusion documentation will indicate if it is a GET or POST method.



Body

In the **Body** section, you will fill in your APP ID and APP KEY, along with any other data to be passed to the method.

Custom Headers

You will need to enter your APP ID and APP KEY into the header information. The services require this to validate your license. Click the + button to add a new field to the Custom Headers section.
Enter X-APPID as the header name, and enter your APP-ID (short code) to the right.
Enter X-APPKEY as the header name, and enter your APP-KEY (long code) to the right.
You can enter these in any order.

Passing XML data

Services that use a POST request may require data to be sent to the service as XML. The XML data it needs is indicated in the **Sample Code** in the method's documentation page.

Sample Code

C#

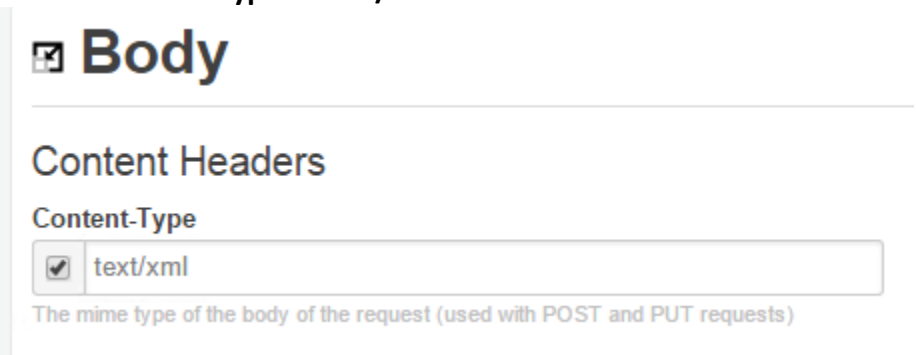
```
using System.Net;

string uri = "http://localhost/FusionOSServices/v1/ONESolution/AccountLookup/KeyLookup
";
var xmlText = "<KeyLookupRequest><Ledger>GL</Ledger><KeyLookupParameter><Field>OrgKey<
/Field><Operator>6</Operator><Value>101*</Value></KeyLookupParameter></KeyLookupReques
t>"
using (WebClient req = new WebClient())
{
    string stringResult = wc.UploadString(new Uri(uri), "POST", xmlText);
    XmlDocument response = xmlDoc.LoadXml(stringResult);
    // TODO
}
```

To send XML data in the REST Console, you will need to enter the following fields:

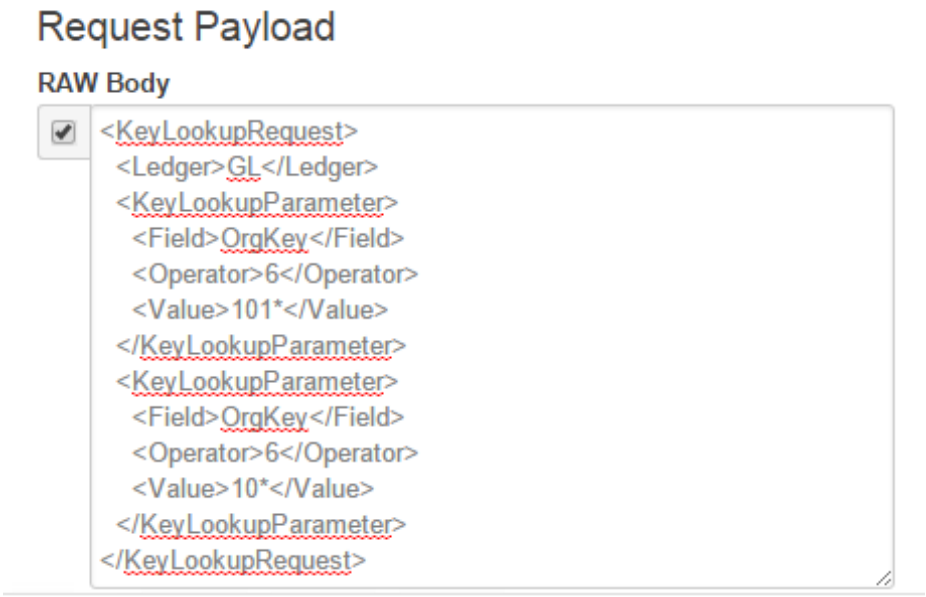
Content Type

Set the **Content-Type** to **text/xml**



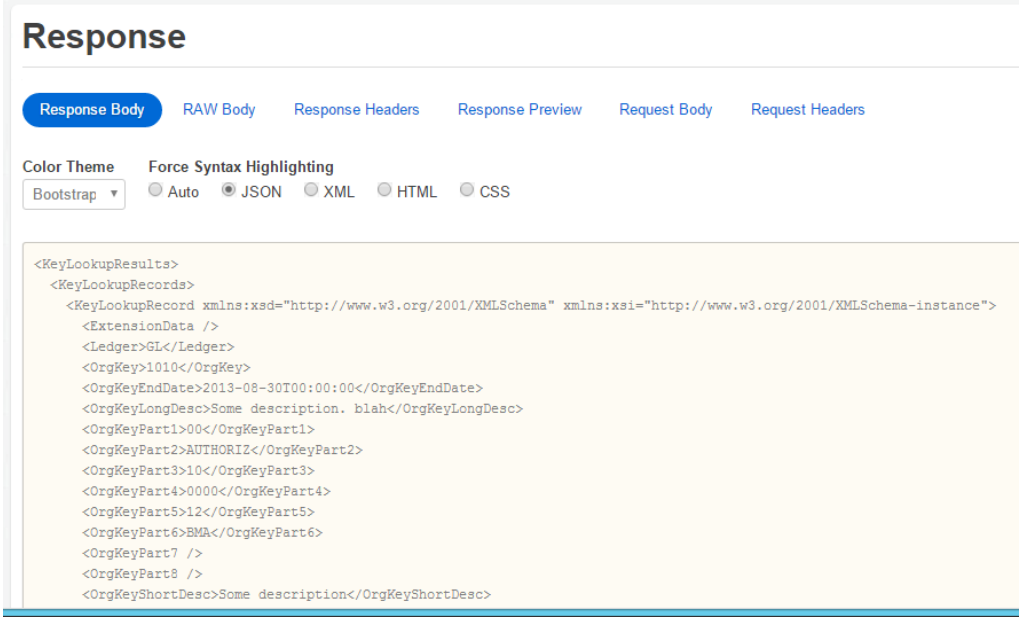
Request Payload

Under **Request Payload** > **Raw Body**, click the checkbox next to the **RAW Body** text area to enable it. Enter your XML data into the text area.



Send

Click on the **Send** button to submit the request. The response will be returned at the bottom of the page.



Return

Follow the links to return to the top of the document.

Configuration Checklist

Return to the Configuration Checklist at the top of this document.

Installation Options

Return to the list of Installation Options to select a new option.

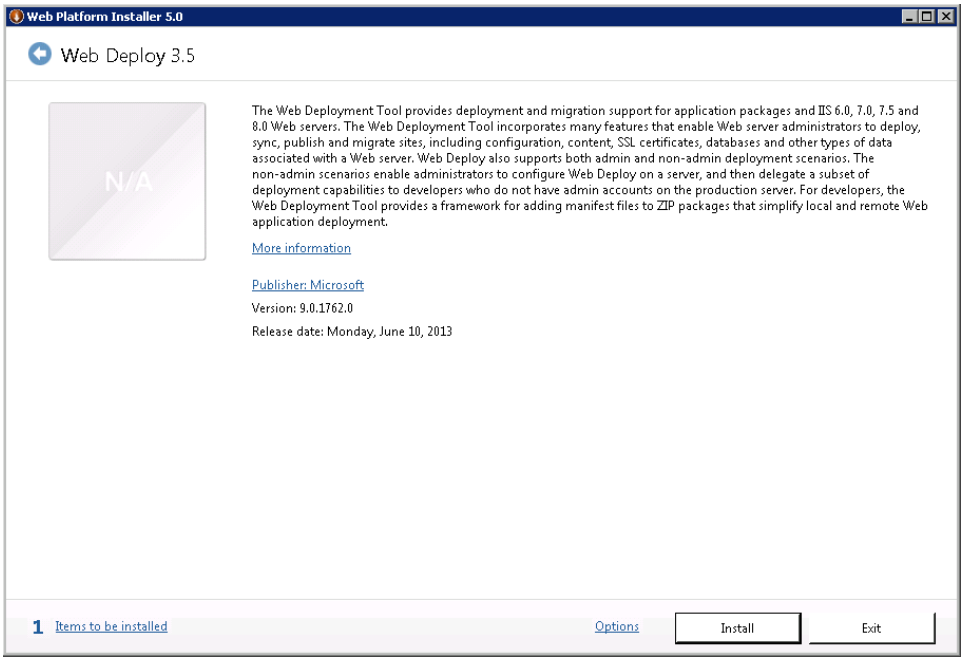
Appendix 1: Web Deploy installation for Windows 2012

Use WebPI to install Web Deploy along with its dependencies like the Web Management Service (WMSvc)

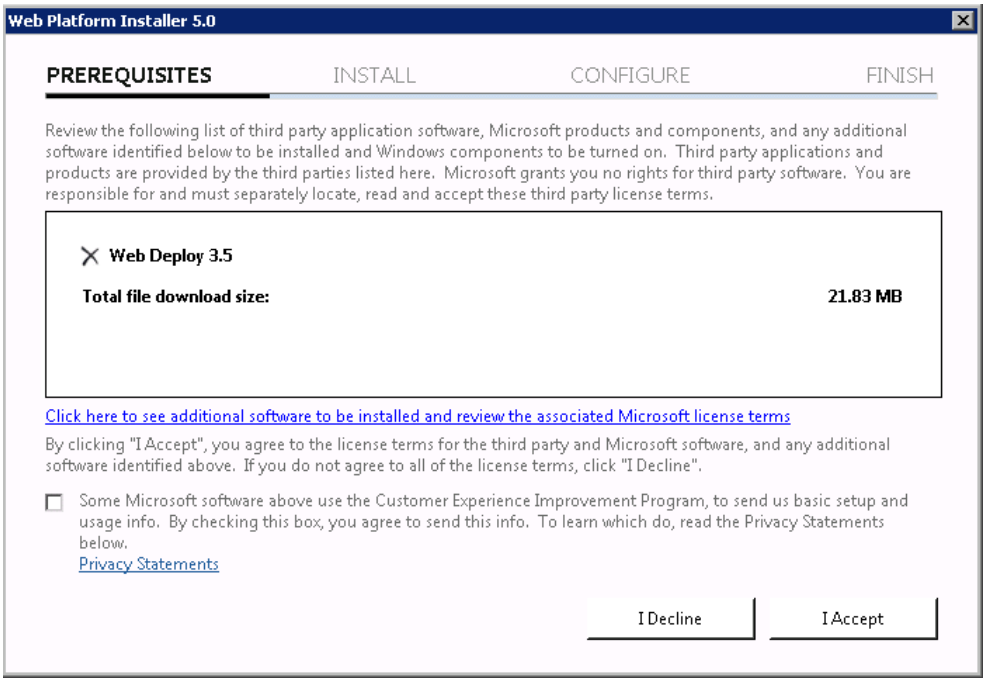
1. Click on the link below to go to the IIs Web Deploy download page.

   http://www.iis.net/downloads/microsoft/web-deploy
2. Click on the **Install this extension** button.
3. At the bottom of the browser, it will prompt you asking if you want to run or save the WDeploy.exe. Click **Run**.

4. The Web Platform Installer will come up.



5. Click on **Install**.
6. Click on I Accept to agree to the license agreements.



7. A progress dialog will appear. Click **Finish** when done.

Pre-Start Checklist

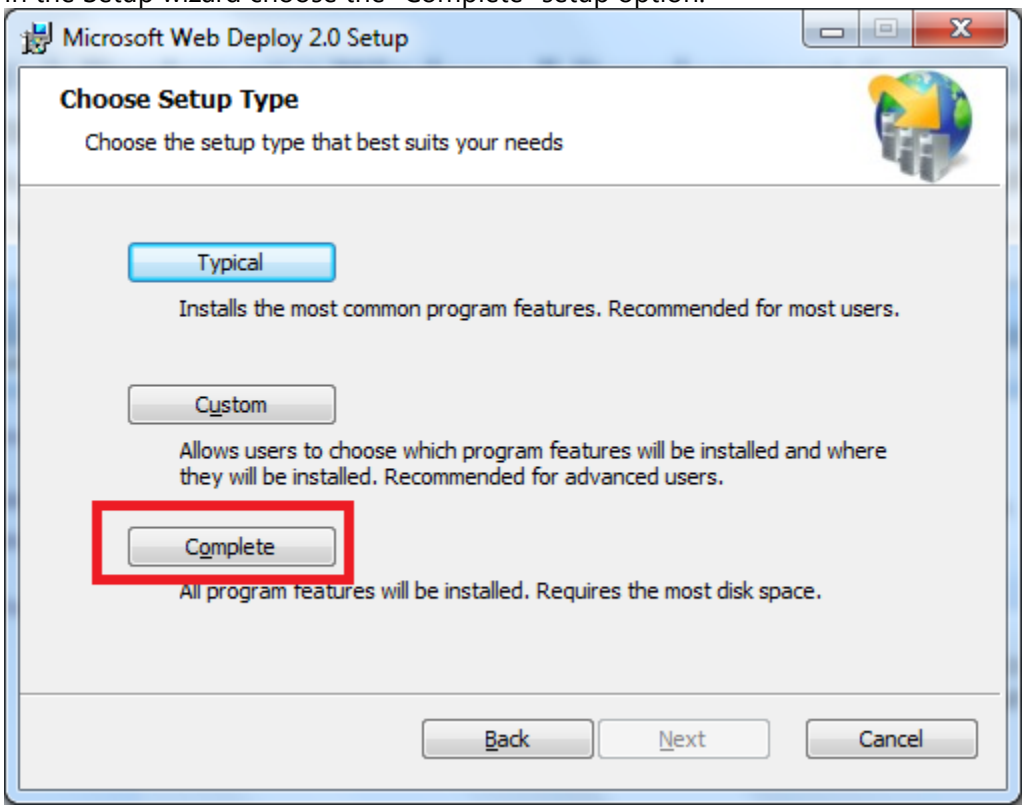
Appendix 2: Installing Web Deploy directly

If you are unable to install the Web Deploy using the Web Platform Installer as outlined in Appendix 1, you can download it directly using the instructions below.

Installing Web Deploy directly:

1. Download the Web Deploy installer directly from the IIS.net Web Deploy page http://www.iis.net/download/webdeploy (x86 | x64)

    . In the Setup wizard choose the "Complete" setup option.



Note: *Using the MSI directly is generally not recommended for the novice user, as recommended or required dependent products must then be installed separately*. The following limitations may create issues when using the MSI instead of WebPI to install Web Deploy on servers:

- The MSI will not install SQL Shared Management Objects (SMO), which is required for the SQL Server database deployments. This component may be installed using WebPI to enable SQL Server database deployments.

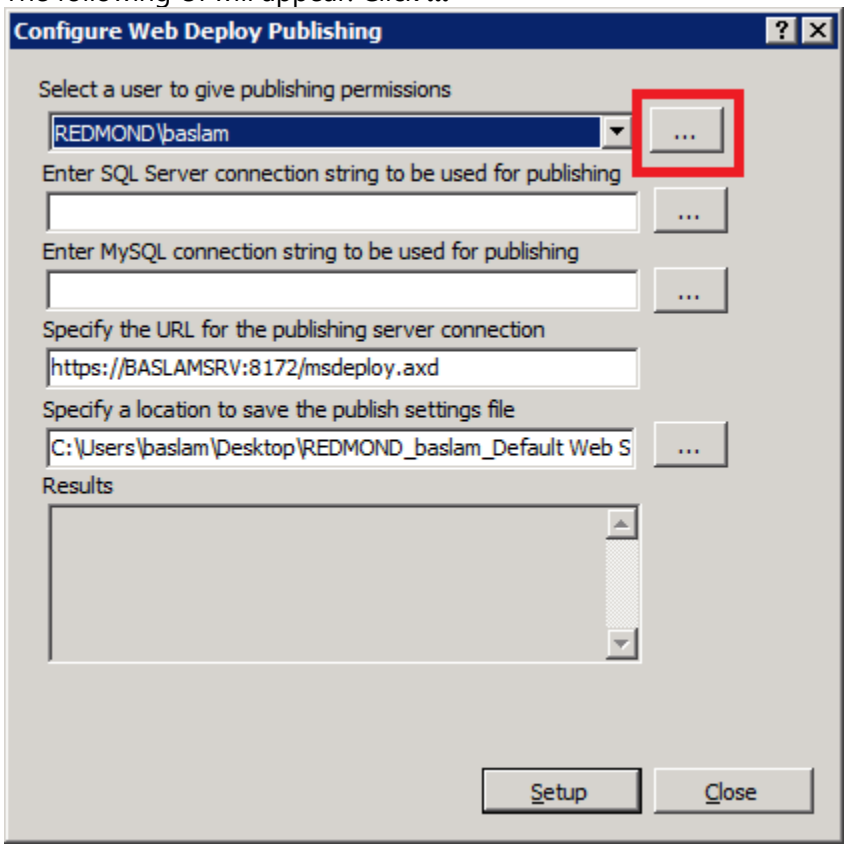
- The MSI will not install the Web Management Service handler component if the Web Management Service is not installed; the handler component is necessary for non-administrator deployments. Windows component IIS, including Management Service, should be installed first to enable the handler component to install.
- The MSI will not configure Web Management Service to allow non-administrator deployments if PowerShell v2 is not installed. This setup step includes creating delegation rules in the IIS server Administration.config file that allow non-administrator users to use Web Deploy. PowerShell v2 is built-in on Windows Server 2008 R2 but may require a Windows Update for Windows Server 2008. Alternatively the delegation rules may be added manually after install.

Configure a Site for Delegated Non-Administrator Deployment

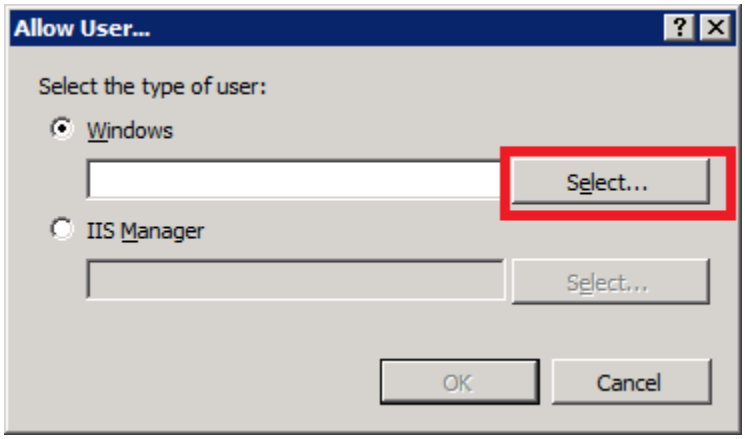
After installing Web Deploy using method (1) or (2a), described above, all server-level configuration is complete for non-administrator publishing, however additional configuration is required at a site level. This site configuration can be accomplished using methods (1) or (2) described below.

1. Create a new site or set permissions on an existing Web site for a new or existing non-administrator user using Web Deploy PowerShell scripts as explained in the PowerShell scripts walkthrough [**link to be added**] OR
2. Configure publishing on an existing site for an existing user using the IIS Manager UI
    a. Start IIS Manager (type “inetmgr.exe” in the Start Menu)
    b. Expand the **Sites** node and right click a site, such as "test"
    c. Click **Deploy** > **Configure for Web Deploy Publishing...**

d. The following UI will appear. Click **...**

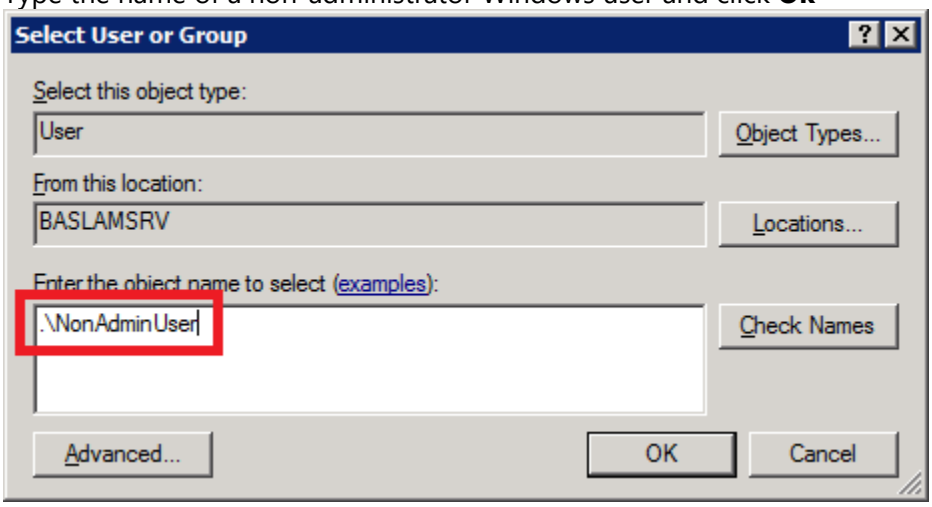


e. Click **Select :**



>

f. Type the name of a non-administrator Windows user and click **Ok**



g. When you click **Setup**, the following log will lines will appear:

- Publish enabled for 'NonAdminUser'
- Granted 'NonAdminUser' full control on 'C:\inetpub\wwwroot\test'
- Successfully created settings file 'C:\Users\JohnDoe\Desktop\NonAdminUser_Default Web Site.PublishSettings'

h. The non-administrator Windows user (NonAdminUser) may now publish to the site (test).

Pre-Start Checklist

Troubleshooting: Manually setting configuration values

If the install gives errors that it cannot write or save values to one of the configuration files, then it can be edited manually after the install. The install log should indicate what file it was unable to write to. This section lists the files and values that need to be set. You can open the named and manually set the value if needed.

The tables below list the Configuration Checklist items to get your values from, and in the **Key/Value** column it gives the section of code for where to set that value in the file. Searching on the keyword highlighted in light blue will help you find the section in the file. Replace the value highlighted in yellow with the value from your Configuration Checklist.

Web.config

This is the configuration file for the Fusion web service. This file is located at:

C:\inetpub\wwwroot\FusionOSServices\Web.config

Configuration Item	Key/Value
ONESoultion Finance Server Configuration List: 3b	`<add key="OSFinServer" value="ServerName"/>`
ONESolution user name Configuration List: 3a	`<add key="username" value="MyUser"/>`
ONESolution domain name Configuration List: 3a	`<add key="domain" value="MyDomain"/>`
App ID Configuration List: 1a	`<add key="SPS:AppID1" value="yourAppID"/>`
App Key Configuration List: 1a	`<add key="SPS:AppKey1" value="yourAppKey"/>`
Key Description Configuration List: 1a	`<add key="SPS:KeyDesc1" value="yourCityName"/>`