



Tungsten Search and Matching Server Installation Guide

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Preface

This guide contains information about installing Tungsten Search and Matching Server and assumes that you have a thorough understanding of Windows standards, applications, and interfaces. Also, since Tungsten Search and Matching Server can be installed alongside Tungsten Transformation Modules and Tungsten Capture or Tungsten TotalAgility, it is necessary to fully understand those applications as well.

This guide is for solution integrators who are installing Tungsten Search and Matching Server or who need a description of the installation procedures and requirements.

If you downloaded Tungsten Search and Matching Server from the Tungsten Automation Electronic Delivery site, you can extract the files from ISO file. Refer to the instruction on the Site. Or, you may have received Tungsten Search and Matching Server as a package that includes electronic media. In this guide, we refer to both the extracted files and the electronic media as the product files.

Related documentation

In addition to this *Tungsten Search and Matching Server Installation Guide*, the following documentation is available.

***Tungsten Search and Matching Server* Getting Started Guide**

The *Tungsten Search and Matching Server Getting Started Guide* provides information on how to start using Tungsten Search and Matching Server and the Administration tool.

Help for Tungsten Search and Matching Server

The Help provides detailed information about the concept and principles of this remote fuzzy database server and how to use Tungsten Search and Matching Server Administration for setting up and maintaining fuzzy indexes.

The product document set for Tungsten Search and Matching Server is available from <https://docshield.tungstenautomation.com/Portal/Products/TSMS/6.10.0-8fsknjo9y4/TSMS.html>


Training

Tungsten Automation offers both classroom and computer-based training that help you make the most of your Tungsten Automation solution. Visit the Tungsten Automation Web site at www.tungstenautomation.com for complete details about the available training options and schedules.

Getting help for Tungsten products

The [Tungsten Knowledge Base](#) repository contains articles that are updated on a regular basis to keep you informed about Tungsten products. We encourage you to use the Knowledge Base to obtain answers to your product questions.

To access the Tungsten Knowledge Base, go to the [Tungsten website](#) and select **Support** on the home page.

 The Tungsten Knowledge Base is optimized for use with Google Chrome, Mozilla Firefox or Microsoft Edge.

The Tungsten Knowledge Base provides:

- Powerful search capabilities to help you quickly locate the information you need.
Type your search terms or phrase into the **Search** box, and then click the search icon.
- Product information, configuration details and documentation, including release news.
Scroll through the Tungsten Knowledge Base home page to locate a product family. Then click a product family name to view a list of related articles. Please note that some product families require a valid Tungsten Portal login to view related articles.
- Access to the Tungsten Customer Portal (for eligible customers).
Click the **Customer Support** link at the top of the page, and then click **Log in to the Customer Portal**.
- Access to the Tungsten Partner Portal (for eligible partners).
Click the **Partner Support** link at the top of the page, and then click **Log in to the Partner Portal**.
- Access to Tungsten support commitments, lifecycle policies, electronic fulfillment details, and self-service tools.
Scroll to the **General Support** section, click **Support Details**, and then select the appropriate tab.

Chapter 1

System requirements

For information on supported operating systems and other system requirements, see the *Tungsten Search and Matching Server Technical Specifications* document on the [Tungsten Search and Matching Server Product Documentation](#) site.

This document is updated regularly, and we recommend that you review it carefully to ensure success with Tungsten Search and Matching Server.

Supported operating systems

Tungsten Search and Matching Server supports 64-bit operating systems only.

Recommended hardware requirements

The recommended hardware requirements for Tungsten Search and Matching Server are outlined in the following sections.

Recommended hardware requirements for the Tungsten Search and Matching Server

Processor:	8 - 32 cores The number of cores vary depending on the number of clients that access the Tungsten Search and Matching Server remotely.
System memory:	1 GB per core
Operating system:	64-bit server operating system
Hard disk space:	You require 1 GB of free hard disk space for the Tungsten Search and Matching Server installation and for each configured database six times the size of the source data. For example, a 1 GB csv text file requires 6 GB of disk space.

Certified CPUs

The Tungsten Search and Matching Server supports multi-processor systems and parallel processing of computation tasks by using multi-core processor technology. Tungsten Search and Matching Server is certified for use with up to thirty-two CPUs.

Software prerequisites

Tungsten Search and Matching Server requires that the following software is installed:

- Runtime libraries for Visual C++ VS2019 SP1 32-bit
- Runtime libraries for Visual C++ VS2019 SP1 64-bit
- Windows Installer 5.0
- Microsoft .NET Framework 4.8

All of the above programs are included as part of the Tungsten Search and Matching Server installer.

In addition, if you plan on using an Oracle database connection, you need to [install the Oracle driver](#).

Chapter 2

Installation

This chapter describes how to install Tungsten Search and Matching Server and the Administration tool.

i Do not install Tungsten Search and Matching Server on a server alongside any other Tungsten Automation products that are in production. This is because Tungsten Search and Matching Server consumes all CPU cores during its search queries, to maximize performance.

For example, Tungsten Transformation Modules and Tungsten Search and Matching Server are both installed on the same server. When Tungsten Search and Matching Server is busy with OCR for a large set of documents, a search by Tungsten Transformation Modules is unable to access enough the CPU power. This results in a slow-down in the overall processing time because the two products are competing for processing power.

There are three components to the Tungsten Search and Matching Server product.

1. The Tungsten Search and Matching Server performs fuzzy searches.
2. The Load Balancer distributes search queries between the available search servers.
3. The Administration tool is used to configure the Tungsten Search and Matching Server and the Load Balancer. You can install the Administration tool on a separate machine.

Important installation notes

This section lists important notes for installing Tungsten Search and Matching Server.

Administrator Rights

To install the product, the logged-in user must have Administrator rights on the local computer.

Change, Repair and Remove the Installed Version

If you need to change, repair or remove the current Tungsten Search and Matching Server installation, start the setup from your installation media once again and select the corresponding button.

Microsoft Windows Firewall Exception

If the Microsoft Windows Firewall service is not running the Tungsten Search and Matching Server installer fails to add the firewall exceptions. The following message is displayed:

Cannot connect to Windows Firewall. (-2147023143)

Click Ignore to continue the installation without adding the firewall exceptions, or start the Microsoft Windows Firewall service manually and then click Retry to correctly configure the firewall settings.

Restart After Updating the Operating System

If you have just installed updates for your operating systems and there is a requested restart still pending, you must restart prior to running the installation. Otherwise the installation may fail.

Services User Account

If the user account used to run the Tungsten Search and Matching Server service is different to the default user account, ensure that the alternate user account is configured with the necessary rights to "Log on as a service."

If the user account does not have the necessary permissions, an error message is displayed.

Web Help Settings

In order to display the Web Help correctly you need to ensure that your browser has scripting enabled. Otherwise, the table of contents may not display correctly and context-sensitivity does not work.

Install the Tungsten Search and Matching Server

This section provides instructions for installing the Tungsten Search and Matching Server.

You can install the Tungsten Search and Matching Server and its components by following these steps:

1. Shut down any applications that may be running on the workstation where you are installing Tungsten Search and Matching Server Administration. This includes the Control Panel, virus detection software, and toolbars.

 Be sure that you have full Windows administrative privileges.

2. Double-click **TungstenSearchandMatchingServer-6.10.0.ISO**.
A list of files in the ISO are displayed.
3. Open the `Prerequisites\Microsoft .NET Framework 4.8` folder.
An executable file is displayed.
4. Double-click on the **ndp48-x86-x64-allows-enu.exe**.
The files are extracted and a progress window is displayed. The Microsoft .NET Framework window is displayed when the extraction is complete.
5. Install the Microsoft .NET Framework 4.8 by pressing **Continue**.
If this version of the Microsoft .NET Framework is installed already, skip to step 8.
6. When the installation is complete, please restart your server if asked to do so before continuing with the installation.
7. After restarting your server, double-click **TungstenSearchandMatchingServer-6.10.0.ISO** again.
A list of files in the ISO are displayed.
8. Double-click `Setup.exe`.

If there are any missing prerequisites that you need to install, click **Continue** to install those prerequisites.

Otherwise, click **Next** to proceed with the installation.

9. Click **I accept the terms in the License Agreement** and then click **Next**.

Optionally, click **Print** to print a copy of the License Agreement.

The **Custom Setup - Modify the installed features** step of the installation wizard is displayed.

10. In this step it is possible to select the features that are installed as follows:

- a. It is possible to install the following components.
 - **Search and Matching Server**. This is installed by default.
 - **Load Balancer**. This is not installed by default.
 - **Administration**. This is installed by default.

Click the feature you want to change, and choose the method from the list.

Click **Reset** to revert any changes to the default components.

- b. Optionally, change the **Location** by selecting **Browse** to change the destination folder for the installation, select a folder and click **OK** to save the settings.

The default **Location** is set to C:\Program Files\Tungsten\SearchMatchingServer.

- c. Click **Next** to continue the installation.

The **Custom Setup - Modify the data folder locations** installation wizard step is displayed.

11. In this step, optionally change the data location folders as follows:

- a. For the **Custom data root folder path for the Tungsten Search and Matching Server** value that includes fuzzy databases, log files, and uploaded files, click **Browse**, select a folder, and then click **OK** to save the settings.
- b. For the **Custom data root folder path for the Tungsten Search and Matching Load Balancer** data, click **Browse**, select a folder, and then click **OK** to save the settings. Click **Next**.

If you do not wish to change the default paths, simply click **Next**.

The **Custom Setup - Modify the administration permission** installation wizard step is displayed.

12. In order to manage and maintain the Tungsten Search and Matching Server or the Load Balancer, the user must be a member of the "TSMS Administrators" user group.

- a. Optionally, edit the value in the **TSMS Administrators group name**.
By default, this value is set to TSMS Administrators.
- b. Select one of the following access types for the Tungsten Search and Matching Server.

Domain group

If this setting is selected, the "TSMS Administrators" user group must be a domain group.

In order to run the Tungsten Search and Matching Server in a domain you need to contact your domain administrator to create the "TSMS Administrators" group and assign users to it before installing Tungsten Search and Matching Server or one of its components.

Local group

The "TSMS Administrators" group must be a local group that can be created automatically by the installer if the following setting is selected.

Optionally, select **Create a local TSMS Administrators group and add the current user to it**, to create the group and add the current user to the group automatically by the installer.

i If you want to specify additional users for the configured user group, you can add those users manually via Groups in the Computer Management window. Right-click on the user group and select **"Add to Group"**.

c. Click **Next**.

The **Custom Setup - Modify the services credentials** installation wizard step is displayed.

13. If you are using a Load Balancer, select **Custom Credentials** and enter the details for the user account that will run the Tungsten Search and Matching Server and Load Balancer services.

If you are not using a Load Balancer, you can use both **Predefined Credentials** and **Custom Credentials** as desired.

The **Ready to install Tungsten Search and Matching Server 6.10.0** step is displayed.

14. Click **Install** to start the installation of the selected features.
15. When the installation process completes successfully, click **Finish**.

Command line installation and parameters

It is possible to use the Command Line to install Tungsten Search and Matching Server, the Administration tool, and the Load Balancer. This type of installation provides you with more control over configuration settings during installation so that you can remotely deploy the software across the network or onto several machines. You can also use a command line if you want to use a [silent installation](#).

There are two options for installing Tungsten Search and Matching Server using the Command Line.

Setup.exe

Use this executable if you are deploying on a small network and do not want to use the .msi installer.

For example, use the following command to install the Load Balancer only. You can also specify the service username, as well as the port number.

```
Setup.exe LOADBALANCER=1 NOSEARCHSERVER=1 NOADMINISTRATION=1
SERVICEUSERNAME=LoadBalancer\Administrator SERVICEPASSWORD=Password
LBCOMMUNICATIONPORT=29999
```

You can use any combination of the available parameters.

TSMS.msi

Use the msi installer if you want to install the software onto multiple machines over the network, and do not want to visit each workstation individually.

i Unlike the Setup.exe, the TSMS.msi installer does not automatically install the [prerequisites](#). You must install these manually before executing the .msi installer.

For example, you can use the following command to install Tungsten Search and Matching Server and the Administration tool, as well as modify the database path, and the specify the TSMS Administrators username.

```
Msixec.exe /i TSMS.msi TSMS_DATAPATH="D:\Tungsten\TSMS"
ADMINISTRATORSGROUP=Administrators
```

In the above command, no parameters are specified for Tungsten Search and Matching Server or the Administration tool. This is because these are installed by default, and the parameters are not required.


For more information about the msixec.exe options, see the Microsoft MSDN description of [Command Line](#) options.

The following parameters are available for both the Setup.exe and the TSMS.msi. If a parameter and value are not provided, the default value is used.


i When upgrading the settings and path values from the already installed version are used when the REUSEPREVIOUSINTALLPATH parameter is not specified.

Command Line Parameters

Parameter	Description and Value Options
NOSEARCHSERVER=0	By default, Tungsten Search and Matching Server is installed from the command line. If you do not want to install Tungsten Search and Matching Server, set the value of this parameter to 1.
LOADBALANCER=0	By default, the Load Balancer is not installed from the command line. To install the Load Balancer, set the value for this parameter to 1.
NOADMINISTRATION=0	By default, the Administration tool is installed from the command line. If you do not want to the Administration tool, set the value for this parameter to 1.
SERVICEUSERNAME=<MachineorDomainName> \<ServiceUser> SERVICEUSERPASSWORD=<Password>	These are the user credentials for the Tungsten Search and Matching Server, the Load Balancer, and the Server Browser. The default value fo this is NETWORKSERVICE, but if you do not want to use this service, provide any accessible username and password combination. If you want to use the Load Balancer, do not use the NETWORKSERVICE. Instead, provide a different username and password.

Parameter	Description and Value Options
USESECURESEARCH=1	This parameter is available for Tungsten Search and Matching Server and the Load Balancer only. By default, secure searches are enabled. If you do not want to use secure searches, add this parameter with a value of 0.
TSMS_DATAFOLDER="C:\TSMS"	This parameter is available for the Tungsten Search and Matching Server only. Specify any valid folder path for the target databases.
LOADBALANCER_DATAFOLDER="<A valid path>"	This defines where the Load Balancer data is stored. Specify any valid folder path.
TSMSCOMMUNICATIONPORT=22000 LBCOMMUNICATIONPORT=22001	These parameters are specific to Tungsten Search and Matching Server and the Load Balancer. If you do not want to use the default ports of 22000 or 22001, use this parameter and specify any free port number.
TSMSLOGLEVEL=INFO LBLOGLEVEL=INFO	These parameters are specific to Tungsten Search and Matching Server and the Load Balancer. If you do not want to use the default logging level of WARN, use this parameter and specify either DEBUG, INFO, or ERROR.
TSMSSERVERLANGUAGE LBSERVERLANGUAGE	These parameters are specific to Tungsten Search and Matching Server and the Load Balancer. If you do not want to use the default languages of English or German, use this parameter and specify an alternative language.  A language pack is needed in order for an alternate language.
ADDUSERGROUP=1	Enables you to specify whether the <code>TSMS Administrators</code> user group is configured at the time of installation. By default, this is enabled, which means that you specify it in a command only if you do not want to change the default user group.
ADMINISTRATORSGROUP=<Group>	Use this parameter if you do not want to modify the administrators user group name. This parameter is not valid if you set <code>ADDUSERGROUP=0</code> .
USEDOMAINUSER=0	Use this parameter only if the <code>TSMS Administrators</code> user group is a local group.
INSTALLDIR="<a valid path>"	This defines where the program is installed. By default, the product is installed in <code>C:\ProgramFiles\Tungsten\SearchMatchingServer\</code> . Specify any valid folder path.

Parameter	Description and Value Options
REUSEPREVIOUSINSTALLPATH=true	<p>When included in the command, the paths of the already installed version are used rather than the new default paths of Tungsten Search and Matching Server 6.10.0.</p> <p>When set to false or excluded from the command, the new default paths are used for the installation.</p> <p>Setting the <code>INSTALLDIR</code> supercedes the <code>REUSEPREVIOUSINSTALL</code> parameter.</p>

 Most options that are available as command line parameters are also available in the [configuration files](#). You can edit these files on each individual machine if necessary.

Use silent install mode

If you do not want to perform an interactive installation of the Tungsten Search and Matching Server, you can use a silent installation. This automatic installation does not display configuration, progress, feature information, or warning windows, although error messages are still displayed.

By default, Load Balancer and Administration functionality is installed by running either `Setup.exe` or `TSMS.msi` using a silent install parameter at the command prompt. [Additional parameters](#) are also available.

The following parameters are available for the silent installation.

Parameters for Silent Installation

Setup.exe Parameters	Msiexec.exe Parameters	Description and Value Options
/?	/? or /h	Shows the Help window.
/quiet	/quiet, /q, or /qn	Runs the installer with no user interaction.
/log [filename]	l*v [filename]	Writes the installer log messages to the specified file.
/uninstall or /u	/x	Uninstalls the product.
	/i	Installs the product.
<property>=<value>	<property>=<value>	Passes additional parameters to the Microsoft Windows installer.

1. From the Start menu, select Run.
2. Type cmd and press Enter.
The command prompt window is displayed.
3. Change to the folder that contains the Tungsten Search and Matching Server `Setup.exe` file.
4. Run setup from the command line.

For example, the following command installs the Administration tool and the Load Balancer only. In addition, a log records the installation steps.

```
setup /quiet NOSEARCHSERVER=1 LOADBALANCER=1 /log TSMSInstaller.log
```

Install Oracle drivers for Tungsten Search and Matching Server

If you are using an Oracle database, it is necessary to install the Oracle driver. You can install the driver by following these steps:

1. Navigate to the Oracle driver website at <https://www.oracle.com/database/technologies/dotnet-odacdeploy-downloads.html>.
2. Under to ODAC XCopy section, download the "ODAC 21c - Latest 64-bit version" driver zip file.
3. Unzip the Oracle driver zip file.
4. From the extracted files, copy `<extractedfiles>\odp.net4\managed\common\Oracle.ManagedDataAccess.dll` and copy it to the following locations on the server where Tungsten Search and Matching Server is installed.


- `C:\Program Files\Tungsten\SearchMatchingServer`

If the installation path has been configured to use a different location than the default path, then please adjust accordingly.

5. Restart the Tungsten Search and Matching Server service.
The service restarts and it is now possible to configure an oracle database connection.

Configure Tungsten Search and Matching Server for Microsoft Azure


This section provides additional instructions for configuring Tungsten Search and Matching Server on a Microsoft Azure virtual machine.

-  On Microsoft Azure, the following virtual machine operating systems are supported only:
- Windows Server 2008 R2 (x64)
 - Windows Server 2012


1. [Install](#) Tungsten Search and Matching Server.
2. Go to the Windows Azure Management website and sign in with your Azure account.
A list of Azure components is displayed in the left pane.
3. Click on Virtual Machines from the left pane.
A list of virtual machines is shown on the right.
4. From the list of virtual machines, select the one where you installed Tungsten Search and Matching Server.
The overview page for that virtual machine is displayed.
5. Click ENDPOINTS from the menu across the top of the overview page.
A list of default endpoints is displayed.
6. Add a new endpoint by clicking + at the bottom of the screen.

The ADD ENDPOINT window is displayed.

7. Select ADD A standalone ENDPOINT and click the right arrow at the bottom of the screen.
The ADD ENDPOINT window displayed a list of details that need configured for your endpoint.
8. Configure your endpoint as follows:
 - a. In the NAME field, type a descriptive name of your Tungsten Search and Matching Server endpoint.
 - b. For the PROTOCOL, select "TCP".
 - c. In the PUBLIC PORT field, type a port number.
The default port value is "22000".

 If you specified a port number when you [installed](#) Tungsten Search and Matching Server, type that value.

- d. In the PRIVATE PORT field, type a port number.

 The value of the PRIVATE PORT must be the same as the PUBLIC PORT.

- e. Clear CREATE A LOAD-BALANCED SET.
 - f. Clear ENABLE DIRECT SERVER RETURN.
 - g. Click on the checkmark in the bottom right-hand corner to save your endpoint settings.
The endpoint settings are closed and the virtual machine overview page is displayed.
9. To connect to your virtual machine, click Connect from the menu across the bottom of the window.
Your virtual machine is loaded so you can configure its settings.
10. Create a user account that is used by Tungsten Search and Matching Server.
 - a. Open User Accounts from the Control Panel.
 - b. Click Manage another account.
 - c. Click Create a new account.
 - d. Type `TSMSService` into the name field.
 - e. Keep all other default settings and click Create Account.
The `TSMSService` account is listed on the Manage Accounts screen.
The `TSMSService` User account is created.
11. Configure the `TSMSService` user account to run as a Service.
 - a. Open the Local Security Policy from Windows Administrative Tools.
 - b. In the console tree, expand **Local Policies**.
 - c. Select User Rights Assignment.
 - d. In the details pane, double-click **Log on as service**.
 - e. Click Add User or Group.
The Select Users or Groups window is displayed.

f. In the Enter the object names to select (examples): field, type **TSMSService**.

g. Click Check Names.

The **TSMSService** user account is listed.

h. Click OK.

The Select Users or Groups window closes.

i. Click OK again.

The Log on as a service Properties window closes.

The **TSMSService** user account is now configured to run as a service.

12. Optionally, if your virtual machine is not part of a domain, create another user account called **TSMUser** that has the necessary rights to use the databases hosted by Tungsten Search and Matching Server.

Tungsten Search and Matching Server is configured to run on Microsoft Azure.

Connection timeout configuration for Microsoft Azure

When Tungsten Search and Matching Server is installed on-premise and one or more of its clients are running in an Azure environment, the connection timeout configuration is needed. This is because Microsoft Azure uses a mechanism to limit the number of TCP connections so that any connection that is idle for at least four minutes is dropped automatically. This behavior conflicts with a fully on-premise Tungsten Search and Matching Server environment because the connection between the client and sever is kept open until the client closes that connection.

This causes problems if a connection with Tungsten Search and Matching Server is dropped by Azure, Tungsten Search and Matching Server is unaware of the break so the connection remains open on the server-side. Since there are a limited number of connections available, this inactive connection can cause performance issues over time. The broken connection can also cause TCP conflicts the next time a connection to a client, such as Tungsten Transformation Modules or Transformation Server, in Azure is made.

Since the connection drop time of four minutes cannot be changed in Azure, it is necessary to close the connection between Tungsten Search and Matching Server and Azure before it is dropped.

To close the connection before the timeout period, add the following code to the `<Configuration>` section in the `Tungsten.TSMS.Service.exe.config` file.

```
<system.serviceModel>
  <bindings>
    <netTcpBinding>
      <binding name="netTcpBindingClientInterface"
        openTimeout="00:10:00"
        closeTimeout="00:01:00"
        sendTimeout="24:00:00"
        receiveTimeout="00:03:30"
        maxReceivedMessageSize="2147483647">
        <security mode="Transport">
          <transport clientCredentialType="Windows"
            protectionLevel="EncryptAndSign"/>
        </security>
      </binding>
    </netTcpBinding>
  </bindings>
</system.serviceModel>
```

i If you are using the Load Balancer, add the above content to the <Configuration> section of the `Tungsten.TSMS.LoadBalancerService.exe.config` file instead of the `Tungsten.TSMS.Service.exe.config`.

Tungsten Search and Matching Server and Tungsten TotalAgility

If Tungsten Search and Matching Server is installed on a different domain from Tungsten TotalAgility, such as when Tungsten TotalAgility is run from a Tungsten-hosted Azure installation and Tungsten Search and Matching Server is run on-premises, modify your configuration by following these steps:

1. Make sure you have created the following local user accounts on the computer where Tungsten Search and Matching Server is installed:
 - An administrative user in the `TSMS Administrators` group. This account is used for managing and maintaining the server and load balancer.
 - The `TSMSUser` to perform the search requests. For security reasons, this user account should not be in the `TSMS Administrators` group.
2. Configure the firewall to open the ports used for communicating between Tungsten TotalAgility and Tungsten Search and Matching Server.
Specify the IP addresses that Azure uses for access. Using internal IP addresses that are not recognized by Azure will cause the communication to fail.
3. In Transformation TotalAgility Designer, add a Remote Fuzzy Database for Tungsten Search and Matching Server and set the credentials to log on as `TSMSUser`.
The credentials are required to authenticate the client user and establish a connection to Tungsten Search and Matching Server to perform a search.

Tungsten Search and Matching Server nodes via the command line

It is possible to call the Administration tool via the Command Line to dynamically add or remove Tungsten Search and Matching Server nodes.

To add a node, use the following syntax.

```
Tungsten.TSMS.Administration.exe /a LoadBalancerAddress=localhost
LoadBalancerPort=22001 NodeAddress=localhost NodePort=22000
```

To remove a node, use the following syntax.

```
Tungsten.TSMS.Administration.exe /r LoadBalancerAddress=localhost
LoadBalancerPort=22001 NodeAddress=localhost NodePort=22000
```

Optionally, use the `/q` parameter to suppress pop-up messages in the case of error or success.

Configuration files

There are two configuration files that can be modified to customize your Tungsten Search and Matching Server installation. By upgrading to Tungsten Search and Matching Server 6.10.0, these configuration files replace previous registry settings. These settings are now available in the configuration files to aid in configuration.

Any change made to these configuration files take effect only once the service is restarted.

1. `Tungsten.TSMS.LoadBalancerService.exe.config`
2. `Tungsten.TSMS.Service.exe.config`

These configuration files are installed alongside their corresponding executables. By default, the installation path is `<Program Files>\Tungsten\SearchMatchingServer`.

Both configuration files have the same options, but they are independent of each other. The options are as follows:

RunningMode

Defines if the server is running in "Normal" mode or "Restricted" mode. The value for this setting is set to "Normal" by default. Only use the "Restricted" mode when you want two load balancers to work together without sending contradictory information.

Port

Select the network port that is used to establish communication during search and configuration operations with the server. By default, either 22000 or 22001 are assigned. You can assign any valid port.

Language

The language used for log messages posted by the service. The value for this setting is set to "en" by default.

For support of additional languages, a language pack for that language is needed.

DataRootDirectory

The path where Tungsten Search and Matching Server stores its data. The value for this setting is set to `C:\ProgramData\Tungsten\TSMS` by default.

TSMSAdministratorsGroupName

The name of the group that a user must be a member of, in order to configure the services. The value for this setting is set to `TSMS Administrators` by default.

You must change this value in both configuration files.

SecureSearchEnabled

Determines whether the network data that is transmitted for a search request is encrypted or not. The value for this setting is set to "true" by default.

You must change this value in both configuration files.

LogLevel

There are different levels that determine what kind of messages are written to the log file. The value for this setting is set to "WARN" by default. This means that only warnings and errors are logged, and no information messages.

LogfilePath

This setting defines the path where the log file is stored. The value for this setting is set to `C:\ProgramData\Tungsten\TSMS\Logs\TSMS.log` by default.

Edit the path as necessary.

RollingLogfileSizeInMB

Defines the size of the log file when it is archived. The value for this setting is set to "10" by default. This means that when the log file has reached a size of 10 MB it is stored as an archive file in the same folder and a new log file is created.

RollingLogfileCount

Defines the number of archive files that are stored on the computer. The value for this setting is set to "10" by default. This means that the last 10 archive files are available.

LogThreadIDInfo

An optional setting that is used only for bug tracking. It writes the ID from the thread posting a message in the log file. The value for this setting is set to "false" by default.

LogMutexInfo

An optional setting used only for dead lock bug tracking. When set to true, an entry is added to the log each time internal mutexes are accessed. The value for this setting is set to "false" by default.

WcfThrottlingMaxConcurrentCalls

Indicates the maximum number of parallel connections allowed. The value for this setting must match the value for the `WcfThrottlingMaxConcurrentSessions` setting below. The value for this setting is set to "128" by default.

A large value for this setting when the service is already busy can decrease the server performance. Increase this number carefully so that the server does not use all of the machine resources.

WcfThrottlingMaxConcurrentSessions

Indicates the number of queries that are processed in parallel on the server. The value for this setting must match the value for the `WcfThrottlingMaxConcurrentCalls` setting above. The value for this setting is set to "128" by default.

McfThrottlingMaxConcurrentInstances


Analyzes the WCF communications. The value for this setting is set to "2147483647" by default. Do not modify the value for this option.

Service account configuration via command line

When you run the Tungsten Search and Matching Server installation, the installed services are started as a Network service user, by default. If wanted, you can set the service user during installation by running the installation from the command line. Additional properties are provided that allow you to set the user name and password in the following format: *<domain or computer name\user name>*.

For example, type the following command:

```
setup.exe SERVICEUSERNAME=MyMachineName\ServiceUser1  
SERVICEUSERPASSWORD=MyPassword2011
```

 This service account user must already have the permission to "Log on as a service" as otherwise the service cannot be started. You then have to change the permission for that user and start the corresponding service manually. For more information, see Microsoft documentation.

Upgrade Tungsten Search and Matching Server

You can install Tungsten Search and Matching Server 6.10.0 over top of the existing installation by following the [installation instructions](#), as long as the existing installation is version 5.5.0 or later.

Tungsten Search and Matching Server 6.10.0 has been rebranded so the default installation paths for a fresh installation differs from older versions.

If you have a version earlier than 6.10.0 already installed, use the `REUSEPREVIOUSINSTALLPATH=true` parameter to keep the installation paths of the older version. Otherwise, all paths are updated to the Tungsten Search and Matching Server 6.10.0 installation paths specified during installation. This can be the new default path or another path specified during installation.

Increase the number of parallel connections

By default, Tungsten Search and Matching Server supports a maximum of 128 parallel connections (with a minimum of 2). You can increase the number of parallel connections by editing the WCF connection settings in the `Tungsten.TSMS.Service.exe.config` file.

You can increase the number of parallel connections by following these steps:

1. Open the `Tungsten.TSMS.Service.exe.config` file.
This file is located in the path selected during installation. By default, this path is `<Program Files>\Tungsten\SearchMatchingServer`.
2. Locate the `ThrottlingMaxConcurrentCalls` setting and set its value to the required number of parallel connections.
3. Edit the `ThrottlingMaxConcurrentSessions` value using the same number as the `ThrottlingMaxConcurrentCalls`.
4. **Save** your changes and close the configuration file.
5. Open the `Tungsten.TSMS.LoadBalancerService.exe.config` file.
6. Edit the same two settings as able with the same values.
7. **Save** your changes and close the configuration file.
8. Restart the Tungsten Search and Matching Server and Load Balancer services.


Maintain the Tungsten Search and Matching Server installation

The Tungsten Search and Matching Server Setup Maintenance routine enables you to modify your existing installation and its security settings. For example, you can select additional components to install, repair the installation, or uninstall Tungsten Search and Matching Server components.

1. Shut down any applications that may be running on the workstation where you want to modify the Tungsten Search and Matching Server installation. This includes the Control Panel, virus detection software, and toolbars.
2. Start the installation from the installation media by running setup.exe.
3. Click **Next** to start the installation and select one of the following options.
 - Click **Change** and select the feature to modify the installation. Then click **Next**, and follow the instructions that are displayed.
 - Click **Repair** to repair Tungsten Search and Matching Server installation and then click **Next**.
 - Click **Remove** to uninstall all installed Tungsten Search and Matching Server components, click **Remove** once again.
4. Click **Finish** to close the installation.

Uninstall the Tungsten Search and Matching Server

You can uninstall the Tungsten Search and Matching Server using the installation media or the Programs utility.

 Removing Tungsten Search and Matching Server does not delete the database files. By default, those files are stored in the <ProgramData>\Tungsten\TSMS\Databases folder.

1. Start the installation from the installation media by running setup.exe in the Tungsten Search and Matching Server/Full Installer (64-bit) folder.
2. Click **Next** to start the installation.
3. Click **Remove** to uninstall Tungsten Search and Matching Server.
4. Click **Remove** once again.
5. Click **Finish** to close the installation.

Uninstall Tungsten Search and Matching Server Administration

You can uninstall the Tungsten Search and Matching Server Administration tool using the installation media or the Add or Remove Programs utility.

1. Start the installation from the installation media by running setup.exe in the Tungsten Search and Matching Server/Administration folder.

2. Click **Next** to start the installation.
3. Click **Remove** to uninstall Tungsten Search and Matching Server Administration.
4. Click **Remove** once again.
5. Click **Finish** to close the installation.

Tungsten Search and Matching Server permissions

The Tungsten Search and Matching Server service user needs to have access permissions to all database servers used as data sources. The Service user also needs to have permissions to read and write to the configured database directory.

In addition, the Service user requires read access to the following Registry location and its sub-keys:

- `HKEY_LOCAL_MACHINE\SOFTWARE\Tungsten\SearchMatchingServer`
- `SOFTWARE\Tungsten\SearchMatchingServer\RecentServers`

The Tungsten Search and Matching Load Balancer requires full network access and the Load Balancer Service user needs to be a member of the TSMS Administrators group. The Search and Matching Server Administration user also needs to be a member of the TSMS Administrators group.

The Tungsten Search and Matching Server Browser Service requires full network access.

Chapter 3

Access Tungsten Search and Matching Server documentation

By default, the Tungsten Search and Matching Server documentation is available online. However, if necessary, you can also configure Tungsten Search and Matching Server to use help offline.

Default online documentation

The product document set for Tungsten Search and Matching Server is available from <https://docshield.tungstenautomation.com/Portal/Products/TSMS/6.10.0-8fsknjo9y4/TSMS.html>

To launch the online help for the installed version of the product, click F1 or select Help from the menu.

Configure Offline Documentation

To access the documentation offline, download it from the [Tungsten Automation Fulfilment Site](#).

 Ensure that each client system has a default browser configured on their machine.

You can configure Tungsten Search and Matching Server to use offline documentation by following these steps:

1. Extract the contents of the documentation zip file from the [Tungsten Automation Fulfilment Site](#).
2. In a location that is shared and accessible to all machines that use Tungsten Search and Matching Server, create a directory called **en_US**.
For example, N:\Documentation\en_US.
3. Copy the **help** folder from the extracted zip file to the en_US directory.
Alternatively, copy the contents of the zip file to the en_US directory in a location visible to IIS.
4. Navigate to the Tungsten Search and Matching Server installation path. By default, the path is located at C:\Program Files\Tungsten\SearchMatchingServer.
If you modified the default path during installation, use the modified path instead.
5. Open the Tungsten.TSMS.Administration.exe.config file and add the following content.

```
<?xml version="1.0"?>
<configuration>
  <appSettings>
```



```
<add key="HelpPath" value="<Documentation_Path>" />
</appSettings>
<startup>
  <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.8" />
</startup>
</configuration>
```

The `HelpPath` value must match where you copied the files.

If you copied the files to a shared folder, enter the root of that path, without the `en_US` part of the path. Using the example from step 2, set the value to `N:\Documentation`.

If you copied the files to a location visible to IIS, set up the corresponding Site or Virtual directory in IIS to serve those files. For example, set the value to `http://localhost/TSMS/en_US` />.

6. Open Tungsten Search and Matching Server Administration and test the help by pressing **F1**.

The help should load from the location configured for offline help.

If an error occurs, double-check the paths to ensure that they are correct, and try again.