



Deploying Syspace

Treetop Innovation AB

For more information, see <https://www.syspace.com/>

Contents

Overview.....	3
Prerequisites.....	3
What this document covers	3
Installation.....	3
Configuration and activation.....	4
Handling upgrades.....	5
Handling configuration changes.....	5
Uninstallation and cleanup.....	5
Removed and remaining state	5
Appendix A: Dependencies	6
Appendix B: Settings files	6
Creating settings files	6
Different types of settings files	6
How settings are applied.....	6
Appendix C: Syspace network use.....	7
Network connections	7
Domains/hostnames/servers that need to remain reachable	7
Appendix D: Syspace editions and compatibility	7

Overview

This document describes how Syspace can be deployed automatically using unattended installation, and how it can be subsequently configured. It also highlights the differences between manual installation and deploying Syspace.

Prerequisites

Although this document will describe what needs to be done, it is not an exact recipe for how to deploy Syspace. This will require a **deployment tool** capable of instructing other servers to install or reconfigure software. If you are reading this document, chances are there is already a well-established deployment tool in your organization.

Every deployment tool should support the necessary operations, and may have different ways to accomplish tasks like:

- Running a command
- Copying a file to a target computer
(This may need to be accomplished by running a batch command to copy a file from a network share)
- Starting a Windows Installer install/uninstall with an .msi file
(This may need to be accomplished by running an msiexec command)

For information about these, please consult the documentation of your deployment tool of choice.

What this document covers

In broad strokes, the following steps are necessary to deploy Syspace:

1. Install Syspace manually to a server
2. Create a Syspace account for your deployment and configure your server to use it
3. Configure Syspace to your desired settings
4. Export a settings file
5. Define the deployment process
6. Perform test deployments
7. Start deploying Syspace

Steps 1–3 involve installing and using Syspace as usual. Please refer to the Syspace manual.

Steps 4 and 5 are covered within this document. Although defining the steps in the deployment process will be different for each deployment tool, the document covers what these steps should do.

Steps 6 and 7 will be different depending on your deployment tool and internal process.

Installation

Syspace is distributed as a zip file containing two files: setup.exe and Syspace.msi.

When installing manually, you double click setup.exe, it installs any necessary dependencies with manual user interaction, and then launches Syspace.msi which guides you through a setup wizard to install Syspace.

When deploying Syspace, two steps are necessary.

The first step is to ensure that the necessary dependencies are installed. Running setup.exe is ill-advised, since it will download and bring up the setup wizard for each of the dependencies for

Deploying Syspace

manual handling. Instead, arrange for the dependencies listed in **Appendix A: Dependencies** to be installed in the appropriate way (for example, by deploying their MSI files or including them in a base image if applicable).

The second step is to run the Syspace.msi installer in quiet (/quiet; show no UI) or unattended (/passive; show progress UI) mode. The only configurable parameter is where to install Syspace. The default location of the Syspace folder is C:\Program Files\Treetop\Syspace. It can be changed by changing the MSI parameter **TARGETDIR**.

Here are a few example msixec invocations:

```
msiexec /i C:\...\Syspace.msi /quiet /qn /norestart  
(Quietly install Syspace)
```

```
msiexec /i C:\...\Syspace.msi /quiet /qn /norestart /L*V C:\...\install.log  
(Log in verbose detail to install.log)
```

```
msiexec /i C:\...\Syspace.msi /quiet /qn /norestart TARGETDIR=C:\Syspace  
(Custom installation path)
```

See <https://docs.microsoft.com/en-us/windows/desktop/Msi/command-line-options> for full msixec usage details.

Configuration and activation

Installing Syspace is only part of deploying Syspace. Syspace needs a license key to run, and you may also want to configure a number of other settings.

When installing manually, you start Syspace, register a Syspace account if needed, enter a license key and proceed, and start up Syspace when you have configured it as necessary. You can also use a settings file.

When deploying Syspace, you must use a settings file including a license key and run a postinstall command to activate Syspace. (For more information about settings files, see **Appendix B: Settings files**.)

First copy the settings file to the Syspace folder.

Then, run the following command (the postinstall command):

```
[path to Syspace]\Syspace.Client.exe /postinstall
```

...to instruct Syspace to initialize the local database, adopt the settings from the settings file (if any), adopt the license key from the settings file and activate the license. Syspace will produce a log file in the log subfolder, named postinstall_*[today's date]*.txt with details. Assuming everything went well, Syspace will be configured, the Syspace service will be started, and Syspace's protection will be active. If not, details will be given in the log file.

Note that if the settings file does not contain a license key, the license key is not valid or there is a licensing issue (not enough licenses available to the associated Syspace account, license expired, etc), Syspace will not be ready to run until the situation has been corrected.

Handling upgrades

Upgrades should be handled with the exact same process as a clean install. Uninstalling the old version beforehand is not required but doing so is harmless. Running the postinstall command is required to cause Syspace to handle database format changes from one version to another.

Handling configuration changes

Syspace does not have direct support for remote configuration, but many configuration changes can be applied by following these steps:

1. Generate an `overrideSettings.syspaceSettings` file containing the desired configuration change.
2. Copy the file to the Syspace folder. (Put aside the current `overrideSettings.syspaceSettings` file if present.)
3. Restart the service `SyspaceService`. Syspace will now pick up the changes.
4. If necessary, restore the previous `overrideSettings.syspaceSettings` file. Be aware that if it contains conflicting configuration, it will be restored the next time Syspace restarts and reconfigures itself to that file.

Uninstallation and cleanup

Use the same `Syspace.msi` as used for the installation to uninstall Syspace.

Running `Syspace.msi` in quiet mode suppresses the uninstall survey.

Here are a few example `msiexec` invocations to uninstall Syspace:

```
msiexec /x C:\...\Syspace.msi /quiet /qn /norestart  
(Quietly install Syspace)
```

```
msiexec /x C:\...\Syspace.msi /quiet /qn /norestart /L*V C:\...\uninstall.log  
(Log in verbose detail to install.log)
```

See <https://docs.microsoft.com/en-us/windows/desktop/Msi/command-line-options> for full `msiexec` usage details.

Removed and remaining state

Uninstalling will cause Syspace to remove any blocks currently in place and remove all files installed by the installation, but will not remove accumulated files since then.

For example, the local database file, “observation” databases (for storing login attempts) and settings files remain so that Syspace can pick up where it left off on a new install. The log folder and files also remain. (Log files older than 7 days are continually removed when Syspace is active.)

To remove all traces of Syspace, remove the folder Syspace installed into.

Syspace does not itself store settings in the Windows Registry.

Appendix A: Dependencies

These dependencies should be installed before installing Syspace, either by running Syspace's setup.exe manually or by installing them individually.

- Microsoft Visual C++ 2008 SP1 Redistributable Package
 - 32-bit/x86: <https://www.microsoft.com/en-us/download/details.aspx?id=5582>
 - 64-bit/x64: <https://www.microsoft.com/en-us/download/details.aspx?id=2092>
- Windows Imaging Component (*only on Windows Server 2003/2003 R2; dependency of .NET Framework*)
 - 32-bit/x86: <https://www.microsoft.com/en-us/download/details.aspx?id=32>
 - 64-bit/x64: <https://www.microsoft.com/en-us/download/details.aspx?id=1385>
- Microsoft .NET Framework
 - *Before Windows Server 2008*: v4.0 (not the version labeled Client Profile)
 - *Windows Server 2008 and 2008 R2*: v4.0 (not the version labeled Client Profile; v4.5, v4.6 etc. are also possible, but [may cause incompatibilities if other v4.0 .NET applications need to run on the same server](#); Setup.exe installs v4.0)
 - *Windows Server 2012 or later*: none; v4.5 or later are included in Windows Server
 - Download links for v4.0:
 - Standalone/self-contained installer: <https://www.microsoft.com/en-us/download/details.aspx?id=17718>
 - Web installer: <https://www.microsoft.com/en-us/download/details.aspx?id=17851>
 - Download links for later versions:
 - <https://docs.microsoft.com/en-us/dotnet/framework/install/>

Appendix B: Settings files

Creating settings files

Settings files (.syspaceSettings) can be created by running Syspace, configuring the desired state, then going to Syspace Settings → Export Settings. Each checkbox in this user interface constitutes a group of settings, and not all groups need be present.

Different types of settings files

Syspace supports two .syspaceSettings files with slightly different behavior.

The **DefaultSettings.syspaceSettings** file provides settings to be adopted once. When Syspace starts up and first sees this file, its settings will be adopted, and Syspace will remember what the file looks like. On subsequent starts, the file will be ignored unless it has changed. If the file has changed, the new settings in the file will be adopted, and so on.

The **OverrideSettings.syspaceSettings** file provides settings that will always be adopted, every time Syspace starts up. If both files are present, the DefaultSettings.syspaceSettings file will not be adopted.

How settings are applied

Every group present in the settings are adopted in their entirety. For example, if a settings file contains two local blacklist entries, adopting these settings implies removing all other local blacklist entries and adding the entries from the file.

Not including a group in the file means that the group is simply ignored. For example, if the whitelist section is not included when exporting the settings, the whitelist is untouched, not emptied.

Appendix C: Syspace network use

Network connections

Syspace makes outbound requests on these following network protocols explicitly. (It may also use other protocols implicitly by using system functionality; for example, exporting a settings file to a network share may use file sharing protocols.)

Protocol and port	Purpose	Required
HTTP over TLS (“HTTPS”, “SSL”) (TCP port 443)	Secure connection to backend, Remote Status Relay and other servers	Yes
HTTP (TCP port 80)	Checking for updates for geographical IP-to-country database	No*
SMTP SMTP STARTTLS SMTP over TLS (TCP port 25 or as configured)	Send email messages when explicitly configured	When configured
ICMP Echo	Perform traceroute when reporting blocks	No
DNS (TCP port 53)	Resolve hostnames	Yes

* While Syspace will continue to operate if the geographical database can’t be updated, the accuracy of the geographical features will be lower with an older database.

Domains/hostnames/servers that need to remain reachable

Syspace connects to these domains as part of normal operation. Please do not block the IP addresses they resolve to in DNS.

Please also do not block the IP addresses listed in <https://syspace.com/kb/syspace-ip-addresses/>.

Domain	Purpose	Required
s.syspace.com	Syspace backend and license server; checking for updates; coordinating Remote Status authentication	Yes
s-sha1.syspace.com	<i>As above, for Windows Server 2003 version of Syspace</i>	Yes
r.rs.syspace.com	Relay Selector server, used to point to Relay server for Remote Status communication (the domains it points to will also need to be reachable; please contact support@syspace.com for more information)	No*
updates.maxmind.com	Checking for updates for geographical IP-to-country database	No**

* Syspace will be unable to use the Remote Status feature.

** While Syspace will continue to operate if the geographical database can’t be updated, the accuracy of the geographical features will be lower with an older database.

Appendix D: Syspace editions and compatibility

Syspace is available in a 32-bit/x86 and a 64-bit/x64 version, and in two variants, one to run on Windows Server 2003/2003 R2, one to run on newer Windows Server versions. Take care to match the correct version with the version and architecture of the operating system on the target server, including not installing the 32-bit version on a 64-bit version of Windows. The wrong version will fail to install with an MSI error. Remote Status is not available in the 2003 variant.

Syspace is not available for the Intel Itanium or ARM architectures.

Syspace is not supported on client versions of Windows, on Windows 2000 or older, on Nano Server or Server Core versions of Windows Server, or running inside a Windows container.