Configuration V8.1

After the installation of SpeechMiner or when changes to the configuration are needed, the SMConfig tool should be used. It is normally found as a shortcut on desktops of the SpeechMiner servers.

Required Permissions
The user that runs SMConfig must have read, write and modify permissions on the local installation folder and files.
For most of the configuration changes that you do using SMConfig you will need administrator privileges on the current machine or on other machines. In each section in this document you will see the required permissions that are needed for running each configuration and a short description of how SMConfig will use this permission.
If you are running SMConfig as a non-administrator user and you get errors during the configuration process - make sure that you have the right permissions for this user as described in this document in the relevant section.

In Windows Vista and later versions of Windows if User Access Control is enabled SMConfig will automatically require you to run it with administrator privileges. If User Access Control is disabled it is recommended to manually run SMConfig with administrator privileges by right click on SMConfig icon and select 'Run as administrator'.

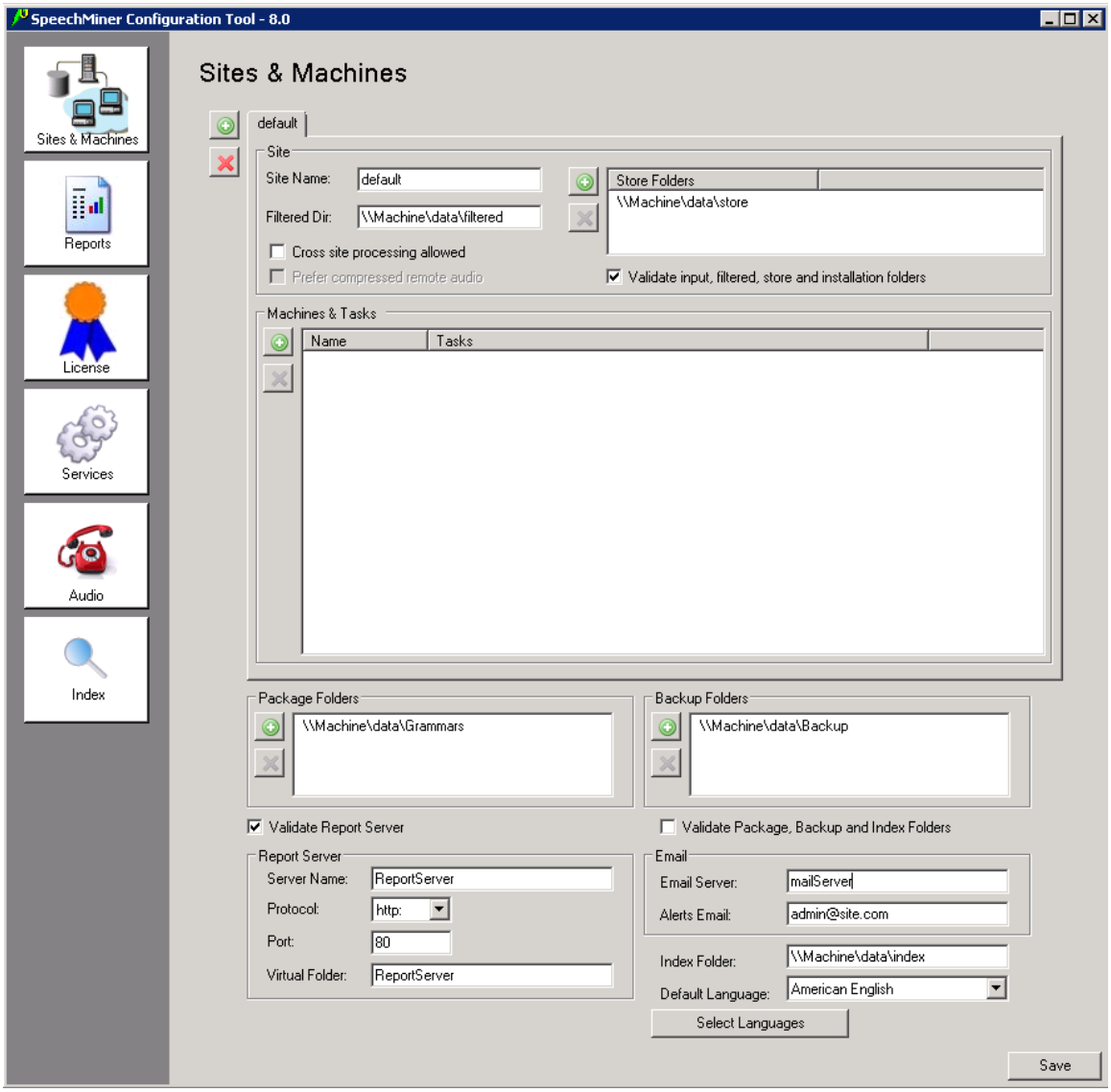
When the SQL server is configured to enforce SSL connection, the "Encrypt connection" box in SMConfig and Smart login has no meaning.
The connection will always be encrypted whether the checkbox is checked or not.

Sites & Machines

The first panel of the SMConfig tool is used to configure the layout of the system as well as some other system wide parameters.

Setting Sites
Sites are usually distanced geographical locations connected to the same database. The reason to maintain several sites is to minimize the bandwidth needed to process calls. Right after an installation of SpeechMiner, the list of machines should already include all the servers that SpeechMiner was installed on. The machines will all be part of a 'default' site and can now be distributed to other sites.

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.



Setting data folders
On the largest hard disk create a folder called "data" and share it.
Under the data folder create the following sub folders:

- "Input" - This is where calls will be placed by the Uconnector for processing.
- "Store" - This is where calls will be stored by SpeechMiner for processing and playback. There can be more than one store folder.
- "Filtered" - This is where calls with non-existing or inactive programs are placed.
- "Index" - This is where the system will store its index files.

Required Permissions
The user that runs SMConfig must have read and write permissions on these folders, make sure that you add these permissions in both 'Sharing' and 'Security' tabs.

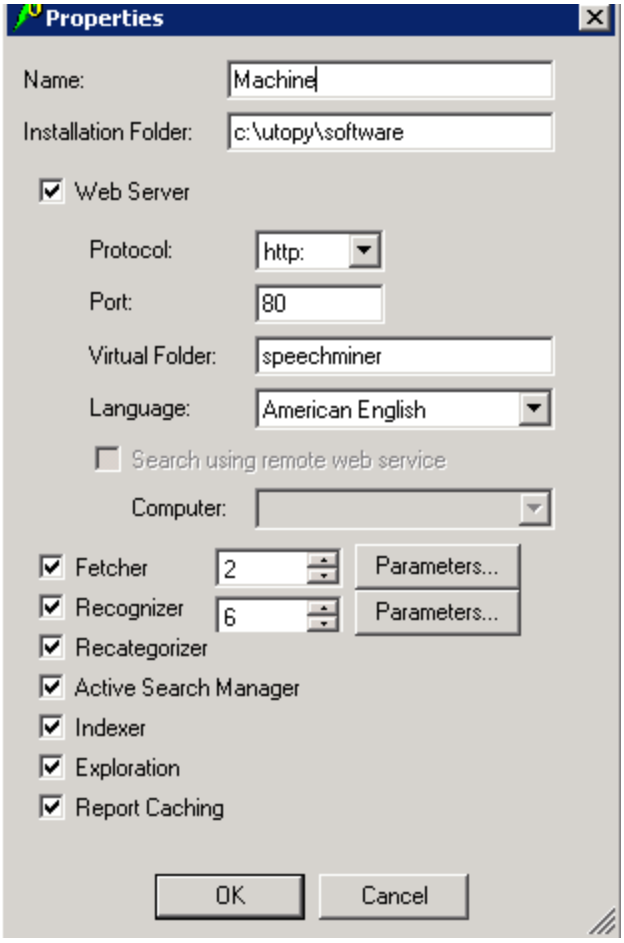
Setting Machines
Each machine can play a different role in the SpeechMiner system.
Normally each site will have:

- One Web Server
- One or more Fetchers
- Several Recognizers, Recategorizers, Active Search Managers and Monitors
- One or more Indexer tasks - the indexer tasks should be configured only on machines that are located on the same local network as the index folder.

Note: Monitors are not configured. Monitors run on all computers in the system.

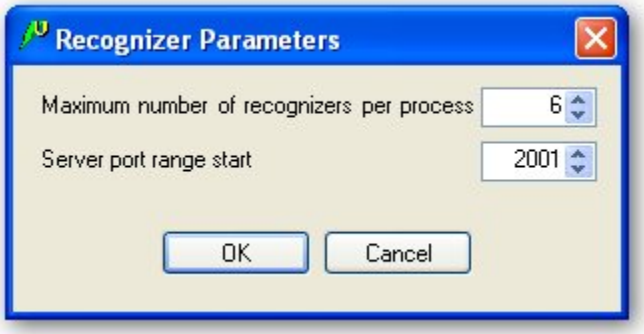
The entire system will have:

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.



Required Permissions
When you click OK in the machine properties dialog and if the 'Validate input, filtered, store and installation folders' checkbox is checked (in the main 'Sites & Machines' panel), SMConfig will try to validate that the installation folder exists using the $ share, therefore the user that runs SMConfig must be administrator on the machine that you are trying to configure.

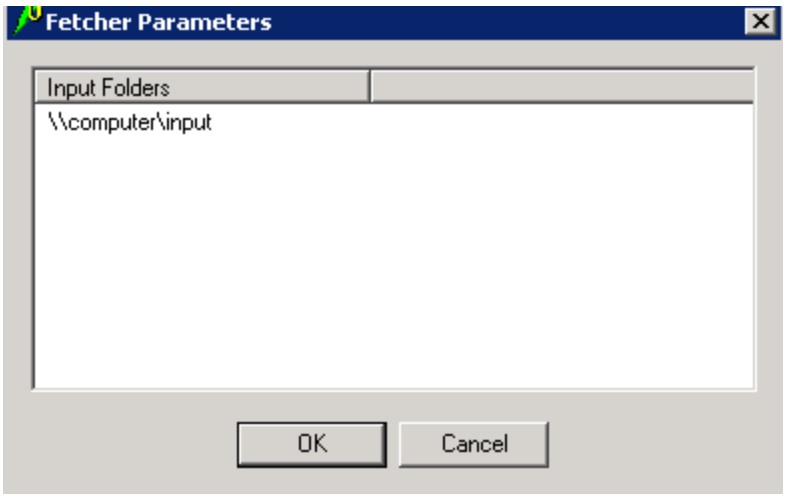
The number of Recognizers to configure on a single machine is a function of how strong the machine is CPU-wise as well as how many topics have to be recognized concurrently. Normally, 6 Recognizers are enough to maximize the CPU usage on a quad-core CPU machine. It is a good idea to have Recategorizers and Active Search Managers run on the same machines as Recognizers.
Note: As a rule of thumb, add 1.5 recognizer tasks per core on each Recognition server.



Recognition actually runs on processes separate from the platform. You can configure how many recognizers are handled by each process. The number should not be too low, so as not to hinder performance, but it should also not be too high, so that the process does not run out of memory. More than 6 recognizers per process are not recommended. If you encounter memory problems, you might even need to lower this number. On a Virtual Machine, it is highly recommended to use only 2 recognizers per process, due to the VM architecture, which causes a higher number of recognizers to considerably slow one another. This recommendation is relevant for virtual machines running both on VMware and Hyper-V servers.

Setting Input Folders
On machines with fetchers, you need to set the input folder for each fetcher. Press the Parameters button, and enter the paths in the dialog that opens:

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.



Email Settings
Email Server - the name of the email server that will be used by SM to send alerts, notifications and reports.

Alerts Email - system alerts will use this value in their "From" field.

> Scheduled reports are sent using Reporting Services subscriptions and only a global 'From' address can be configured in reporting services.To configure scheduled reports 'From' address, see SQL2005 Server Installation and Configuration for SpeechMiner.

Report Server Settings
Server Name - The machine of the report server
Virtual Folder - The folder of the reports within the report server - usually named ReportServer

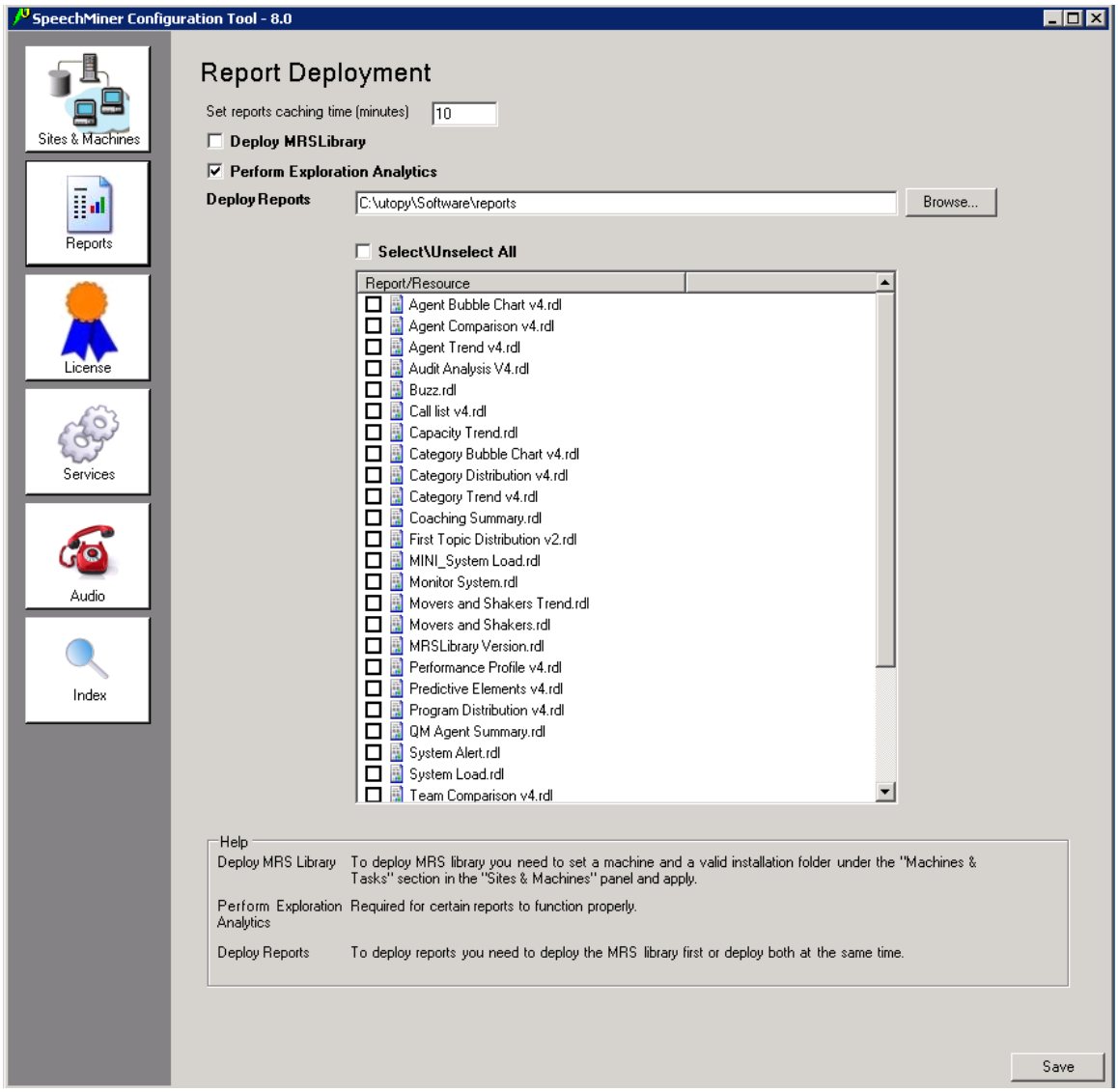
If you want to use the reports, please use the automatic validation (Validate Report Server checkbox) to make sure that the report server parameters are correct

> **Required Permissions**
> When you click Save in 'Sites & Machines' panel and the 'Validate Report Server' checkbox is checked, SMConfig will try to validate that you have access to the reports web service and validate that you can call methods using this web service, therefore the user that runs SMConfig must have the 'Content Manager' role in the reports server.

Reports

In order to use the reports, they should be deployed to the report server.

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.



1. Specify [Install Folder]\reports in the path text box (c:\utopy\software\reports)
2. Set the caching time for the report templates
3. Check the 'Perform Exploration Analytics' checkbox if you want to deploy and use the exploration reports.

Deploy MRSLibrary

- The 'Deploy MRSLibrary' checkbox will be enabled only if the user that runs SMConfig can access the MRSLibary.dll file, this file should exist in the MRSLibrary folder under the SpeechMiner installation folder.
- To deploy the MRSLibrary manually copy the MRSLibrary.dll and ICSharpCode.SharpZipLib.dll from the support folder under the installation folder to the bin folder of the report server.

Deploy Reports

- Before SMConfig can deploy the reports the MRSLibrary must be deployed first, therefore the 'Deploy Reports' panel will be enabled only if the MRSLibrary.dll is already deployed in the reports server or if the 'Deploy MRSLibrary' checkbox is checked.

Required Permissions
To check if the MRSLibray is already deployed and to deploy it in the reports server SMConfig need to read the registry on the reports server machine to find the location of the reports server bin folder and than access this folder using the $ share, therefore to deploy the reports and the MRSLLibrary the user that runs SMConfig must be administrator on the reports server machine.

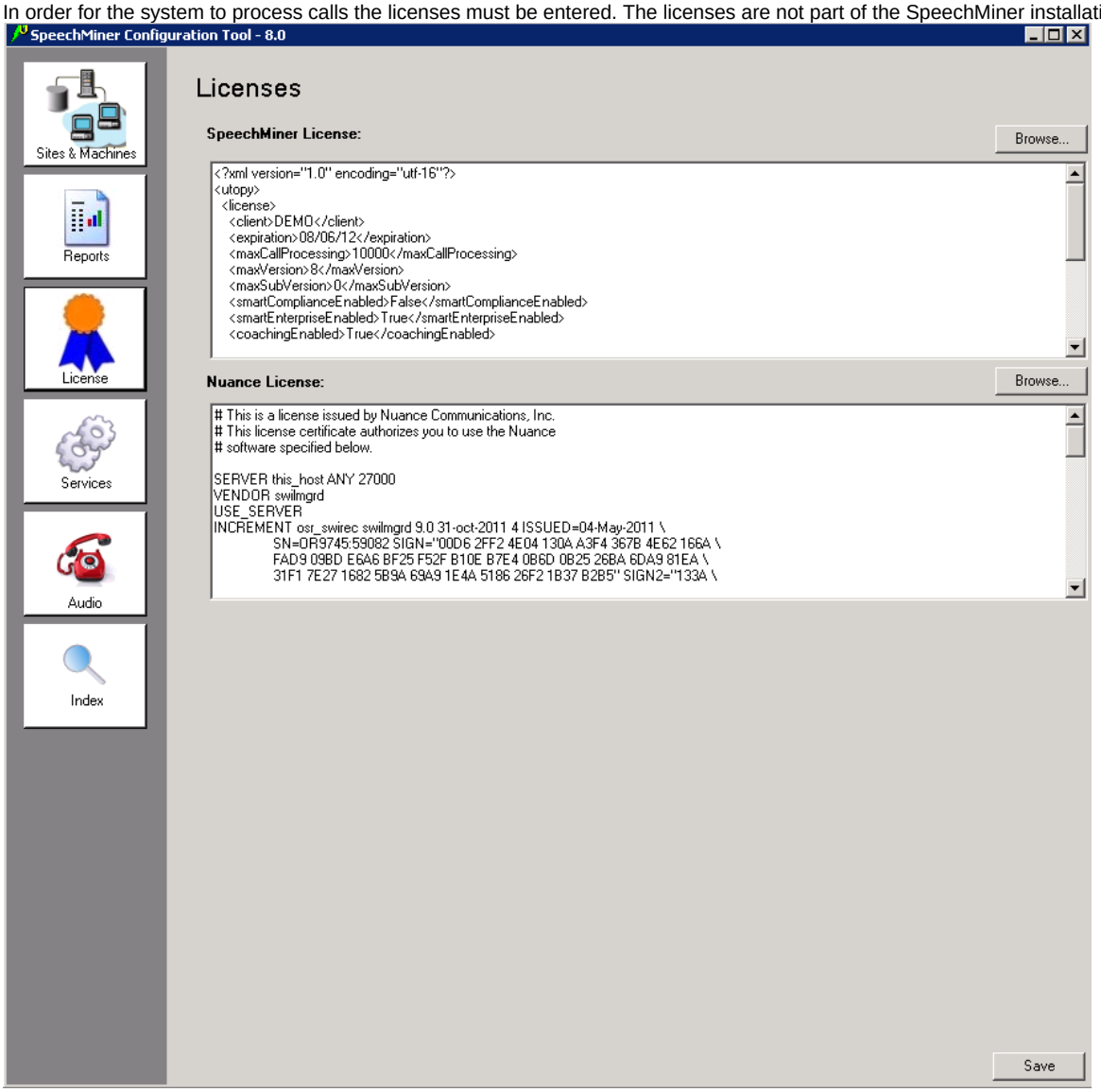
CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.

SSRS 2008
When SSRS 2008 is used you need to manually deploy the reports from the folder: reports\SSRS_2008 (the SSRS_2008 folder is not copied to the local machine using the SpeechMiner installer)

Windows Authentication
When the db credentials are using Windows authentication, you need to manually update the credetials of the data source (sme) in the report server.

Licenses

In order for the system to process calls the licenses must be entered. The licenses are not part of the SpeechMiner installation CD.

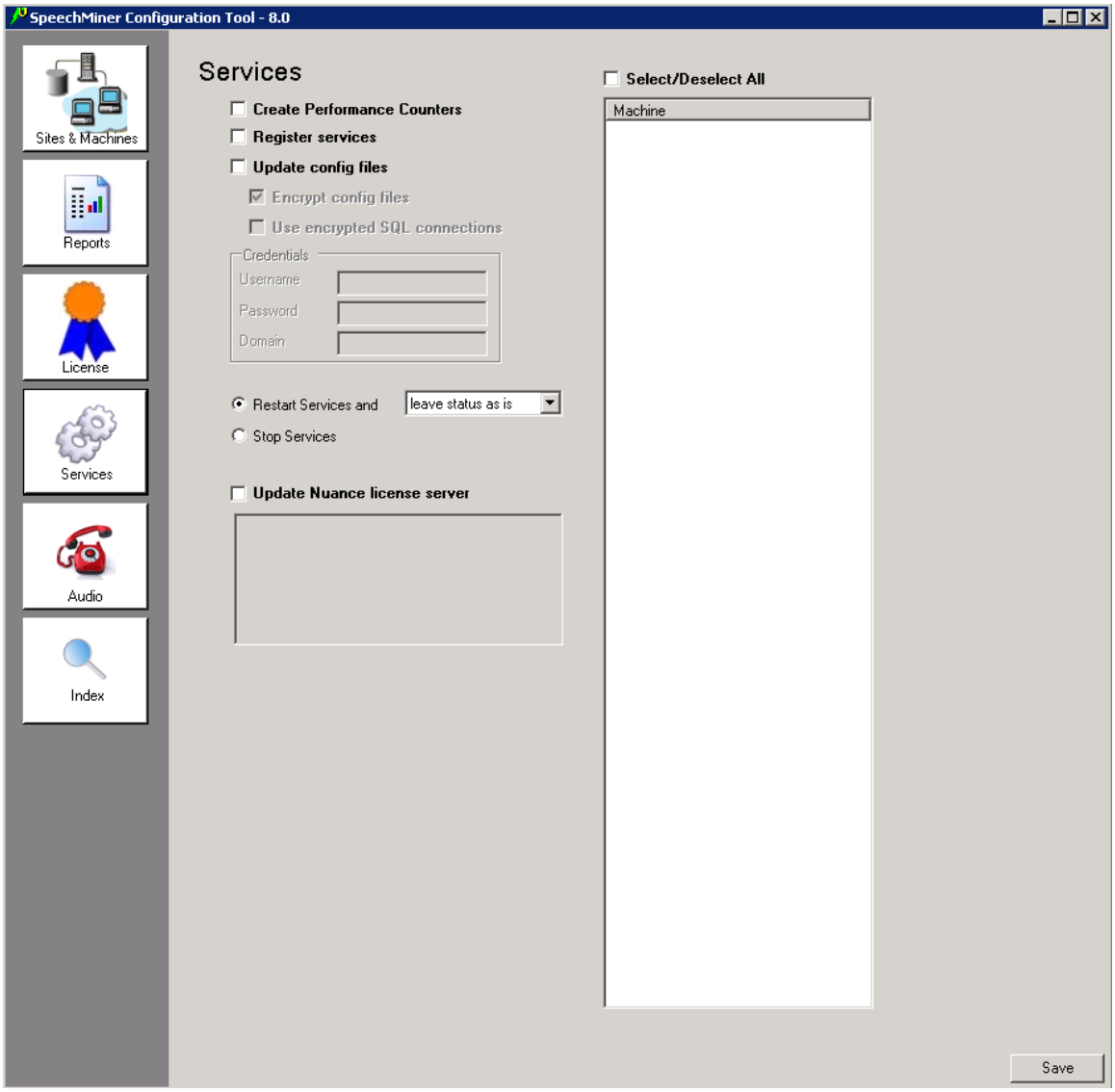


To update the licenses, just copy/paste them into the text boxes and apply, or you can browse for files containing them, and the content of the files will be copied to the text boxes.

Services

In this panel the SpeechMiner services are registered and configuration files are updated on each machine.

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.



Performance counters
Performance counters should normally be configured only once for each machine. Check this option for newly added machines and apply.

Required Permissions
If you try to create the performance counters on remote machines the user that runs SMConfig must have administrator privileges on those machines.
If you try to create the performance counters on the local machine (on the same machine that SMConfig is currently run on), power user privileges on the local machine are enough in Windows Vista and Windows Server 2008.
The administrator privileges are required in order to run remote command on the selected machines.

Services registration
Services should be registered on a machine after installation or when the credentials of the windows user running the services have changed. Check this option, enter the windows user credentials and apply.
The user that you type in the credentials section will be used for running the service, this user must have the permissions and privileges as described in the installation document under the section 'Required Credentials and Permissions'.
If the credentials are not for a domain user but a local user in each machine, make sure to put a "." (dot) instead of the domain name. The Uplatform service will be registered but the user will not have the "run as service" role. You will have to manually go to the Windows services management tool in every machine, enter the password again and click apply.

Required Permissions
The user that runs SMConfig must have administrator privileges on those machines in order to register the Uplatform service.
The administrator privileges are required in order to run remote command on the selected machines and for registering the service using the Windows Services API.

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.

Configuration files
Configuration files should be updated on a machine after installation or when the credentials of the windows user running the services have changed. Check this option, enter the windows user credentials and apply.

> **Required Permissions**
> The user that runs SMConfig must have administrator privileges on those machines in order to update the configuration files on the local machine and on remote machines.
> The administrator privileges are required in order to access the files using the $ share and for encryption and decryption in case that you check the 'Encrypt config files' checkbox.

> Some Post Installation Sanity Checks
>
> - Make sure you can login to SMART
> - Apply some topics and programs to the production system
> - Run a few calls
> - Make sure calls and reports are accessible from the web application

Restart/Stop Services
Use this option to control the Upltfrom service status.

> **Required Permissions**
> To change the Uplatform service status on remove machines you will need to run SMConfig with user that have administrator permissions on the remote machines. The administrator permissions are required in order to get the service information and change it's status remotely using Windows Services API.
> To change the Uplatform service status on the local machine that SMConfig is currently runs on you can also run SMConfig with user that has power user privileges on the local machine.

Nuance License Server
If your Nuance License Servers are installed on central machines, enter the list of servers and ports in this box. This will update the selected machines' environment variables so that they point to these License Servers.
To have SMART access a central License Server, you need to add the following environment variable (you can have more than one server in the list, separated by semi-colons):

```
SWILicenseServerList=port@server
```

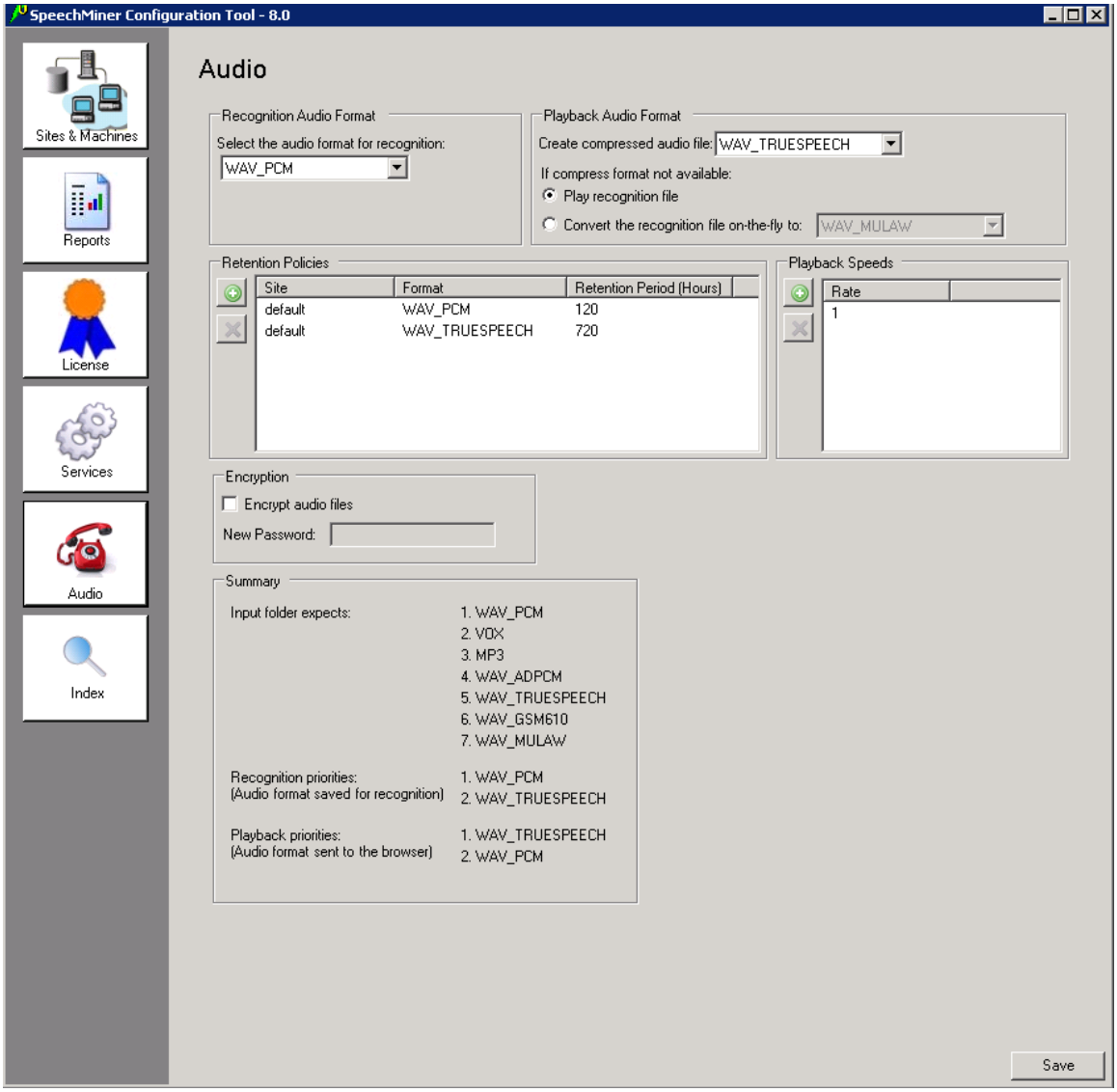
> **Required Permissions**
> To update Nuance license server on remote machines SMConfig must run with user that have administrator privileges on the remote machines.
> To update Nuance license server on the local machine that SMConfig is currently runs on, in Windows Vista or later version of windows you can also use user with power user permissions on the local machine. In windows 2003, you will need to use user with administrator privileges on the local machine.
> The administrator permissions are required in order to update the registry key that controls the Nuance environment variables.

> To update the Nuance license server on remote machines the 'Remote Registry' service must be running on these machines.
> If you get the error "Failed to update Nuance license on [MACHINE NAME] The network path was not found" - make sure that this service is running on the specified machine.

Audio Manager

In this panel you can configure the recognition and playback formats, retention periods for each format and site and playback rates.

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.



Recognition Audio Format
This format will be generated and stored in the store folders by the fetchers, files with this format will be used for recognition

Playback Audio Format

> **Windows 2008, Windows Vista and Windows 7**
> TrueSpeech format is not supported on the following platforms: windows 2008 server, Windows Vista and Windows 7
> For those platforms it is recommended to use GSM as the Playback Audio Format

"Create compressed audio file" - this file will be generated and stored in the store folders. If you don't want the compressed file to be created select the option "Do Not Generate".

When a call is played in the browser the compressed file will be the first priority to be played. If the compressed file does not exist there are two options:

1. "Play recognition file" - in this case the player will play the recognition file directly without any format conversion.

2. "Convert the recognition file on-the-fly to" - in this case the player will first convert the recognition file to the selected format and then play it to the user.

Retention Policies

This table is automatically filled with each site in the system and with each relevant format according to the selections in 'Recognition Audio Format' and 'Playback Audio Format'.

As part of the configuration you'll need to manually adjust the retention periods for each site and audio format.

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.

The value -1 indicates an indefinite retention. This value should only be used in static systems where the number of calls is limited and does not continuously grow.

Playback speeds

In this table you can choose the player rates that will be available in the Utopy Media Player.

Summary

The summary shows you what will be expected by the fetcher, recognizer and the player according to the selection:

"Input folder expects" - shows the list of audio formats that the fetcher can support according to the selection in 'Recognition Audio Format'

"Recognition priorities" - shows the list of audio formats that will be used for recognition. This list is sorted according to the priority of each audio format.

"Playback priorities" - shows the list of audio formats that will be used for playing in the Utopy Media Player. This list is sorted according to the priority of each audio format.

Advanced Configuration
The audio manager eases the configuration process of common configurations. If the client requires a more complex configuration it will be needed to be manually defined in the DB.
Note that if you already have a more complex configuration in the DB and you open the audio manager in SMConfig, the tool will NOT display the complex configuration. So, if you press 'Apply' the complex configuration will be overwritten with the simple one !

Audio Conversion
When you press 'Apply' the audio manager will first check if all the required audio conversions are defined correctly in the DB, if it finds a problem the apply process will be stopped and you'll need to manually fix the audio conversion in the DB.

Start/Stop the system (bootstrap)

After installing and configuring all the machines, you will need to start all the instances of the uplatform.exe service, on all the servers. On the services panel, uncheck all the checkboxes and select "restart service and change status to run". Select (on the machine list box) the servers you would like to start. Then click apply. The popup dialog will show the progress of starting the services.
In the same way you can choose to "restart service and change status to idle". This will start the service, but the system will remain in an idle mode. Another option to toggle between "idle" and "run" status is to use the system monitor page on the SpeechMiner web application.
If you need to completely stop all the services, choose the "Stop Services" radio button. With the list of servers selected on the machines list on the right, click the apply button.

Manual Configuration

Setting Date & Time settings for SpeechMiner web:

The webServiceParams table has two fields for configuring the date & time display

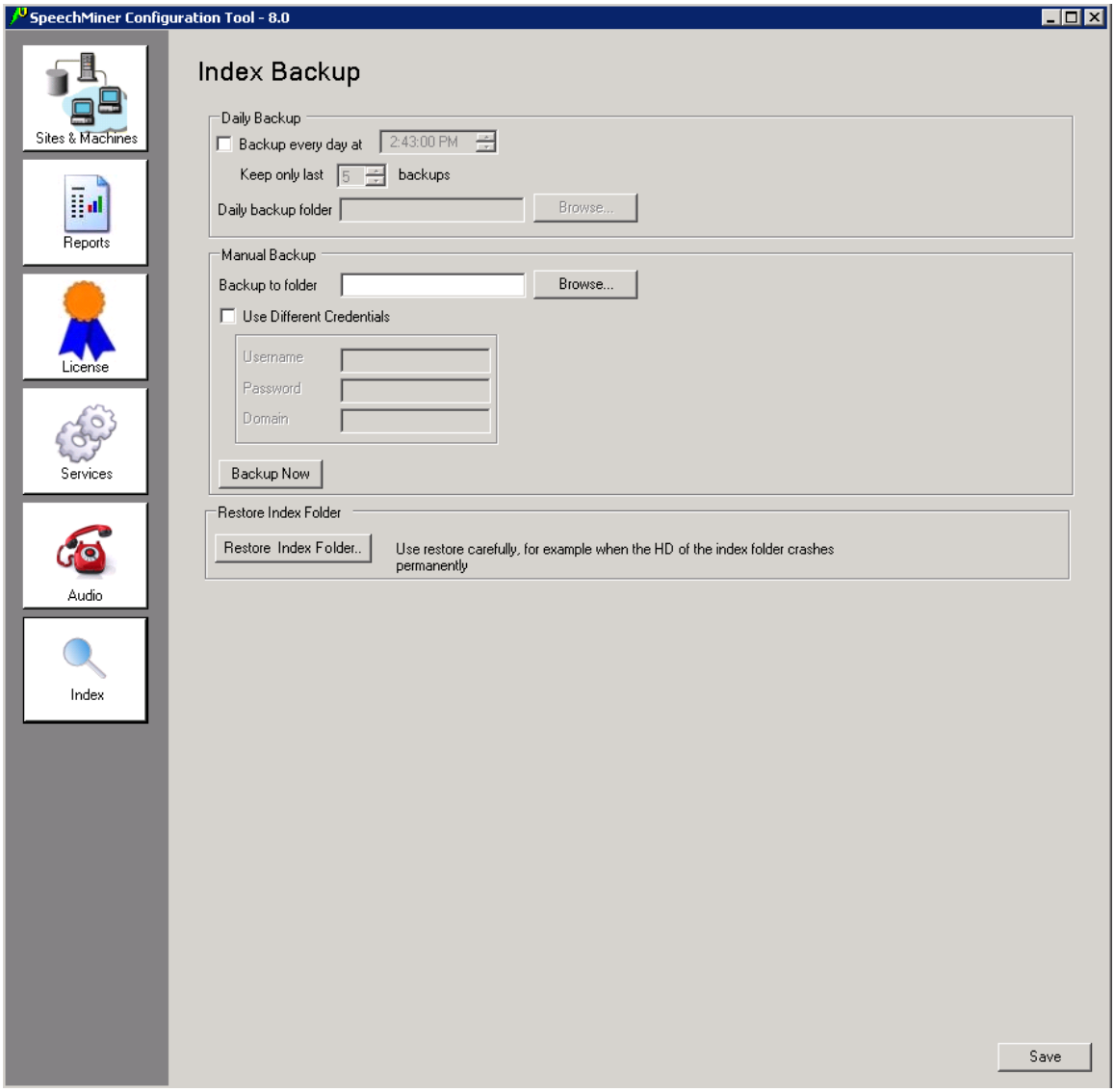
1. globalDateFormat which configures the date format, for example: MM/dd/yy
2. globalDateTimeFormat which configures the time format, for example: hh:mm tt

Additional options must be according to http://www.w3.org/TR/NOTE-datetime
Note: In a Spanish SpeechMiner web the only formats supported for globalDateTimeFormat are these 24 hour formats: H:mm:ss or H:mm

Index Backup

A new panel was added to SMConfig to manage the index backup.

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.



Two types of backup are available:

1. Daily backup - the user can set a time and backup folder and SM will automatically backup the index every day at the specified time to the specified folder.
2. Manual backup - the user select a folder and the index is immediately backed up to that folder.
   If different credentials are required to access the index folder you can check the 'Use Different Credentials' check box and enter the required user credentials.

> The backup is not incremental, every time the backup is started all the index files are copied to the backup folder

Index Restore

There are two options:

Delete the existing index and then create it from scratch

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.

This solution is better when:

1. You don't have a backup of the index folder
2. Your DB is small.

Notice that: the index task re-indexes about 210,000 calls per hour and in this solution you re-index all the calls in the DB

Step by step:

1. Stop all the Uplatform services that are running an index task
2. Run the following SQL command: **truncate table indexq**
3. Delete all the files in the index folder
4. Run the following stored procedure in the DB: **exec dbo.sp_reindexCallsByParams 3,0,0,''** (and from v7.3 run also the reindex of the text interactions: **exec dbo.sp_reindexTextDataByParams 3,0,0,''**)
5. Start the Uplatform services that you stopped before.
6. After 1-2 minutes, the index task will start to index the calls. In 7.2, it indexes about 3500 calls per minute. Newer calls will be indexed first.

Restore the index folder from a backup by using SMConfig

This solution is better when:

1. You have a backup of the index folder
2. Your DB is very big and you want that the restore will be fast.

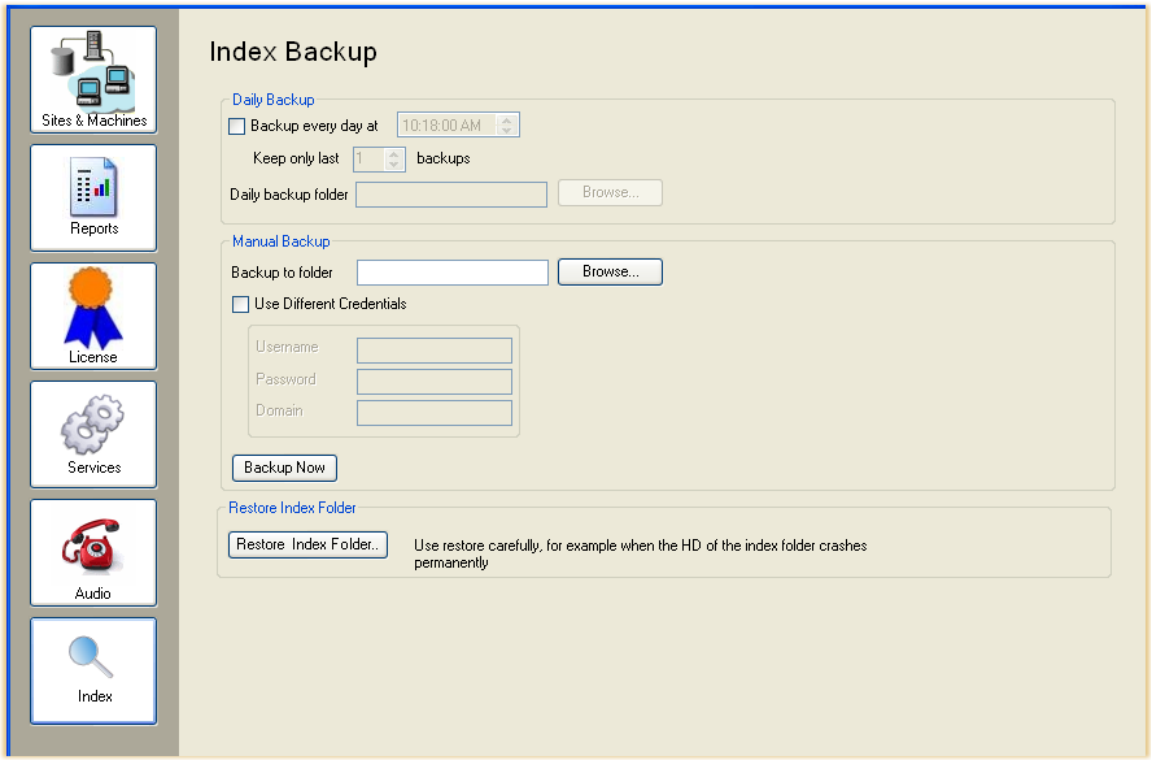
Notice that: the index task re-indexes about 210,000 calls per hour and in this solution you re-index only calls that were re-indexed after the backup was created. You can start to work on the backup of the index almost immediately.

1. There are two options for restore (both are supported by SMConfig):
    a. Make the backup folder the current index folder.
    b. Restore the index to a new index folder (from the backup folder).
2. You should not restore your index folder manually. SMConfig also takes care for re-indexing all the calls that were re-indexed since the backup was created.

Step by step:

1. Open **SMConfig**.
2. Go to the **Index** panel.
3. Press **Restore Index Folder..**

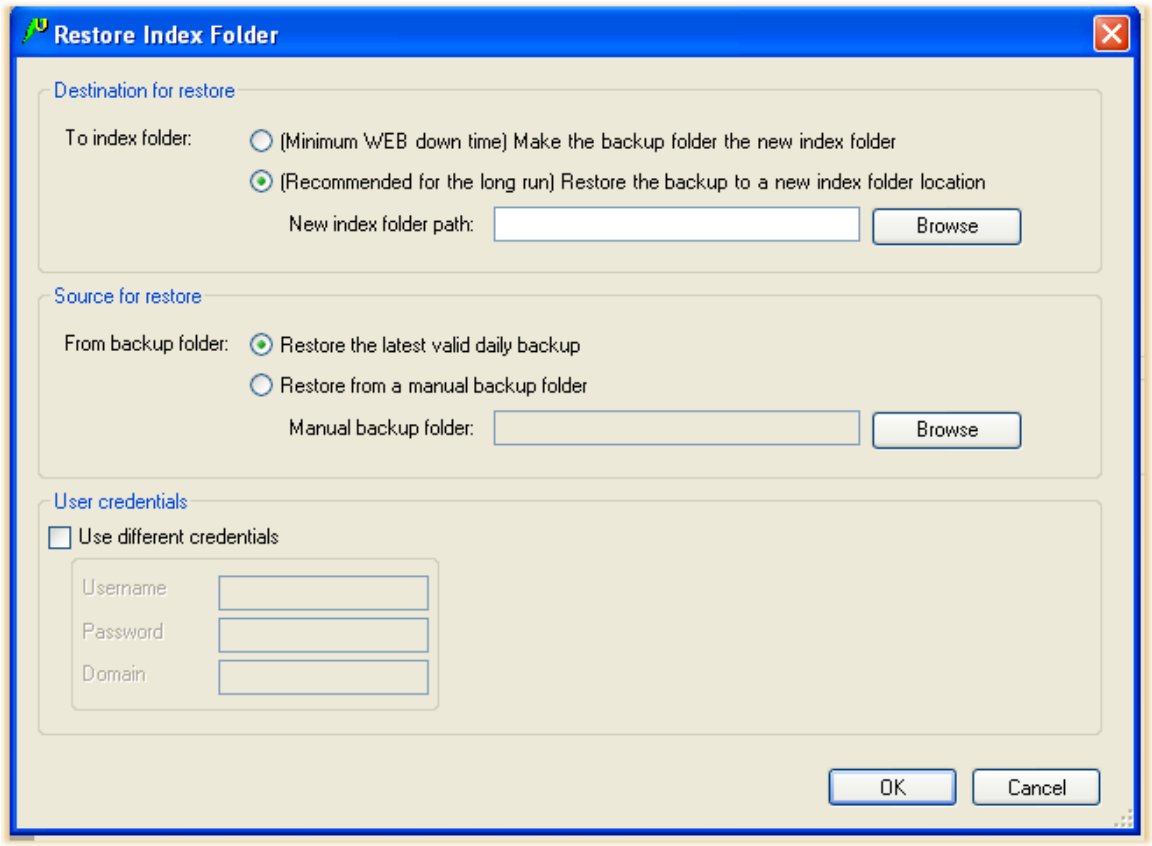
CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.



4. Choose one of the alternatives for **To index folder**.
    a. If you choose **(Minimum WEB down time) Make the latest valid backup folder the new index folder**:
        i. The backup folder is set as the new index folder
    b. If you choose **(Recommended for the long run) Restore the backup to a new index folder location**:
        i. Specify the new index folder and press **OK**
        ii. The copying will start (from the backup folder to the new location which must be empty))
5. Choose one of the alternatives for **From backup folder**:
    a. If you choose **Restore the latest valid daily backup**:
        i. The backup folder is set to be the newest valid daily backup folder
    b. If you choose **Restore from a manual backup folder**:
        i. Specify the backup folder
6. Press **OK**
7. The restore will start
    a. Indexing requests will be inserted into the index queue for all the calls that were processed/updated after the backup was created
    b. The WEB servers are will be notified that the index folder has been changed.
8. When it finishes, restart the platform

Notice:
No matter which backup folder option you choose, SMConfig checks the validity of the folder before it allows a restore

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.



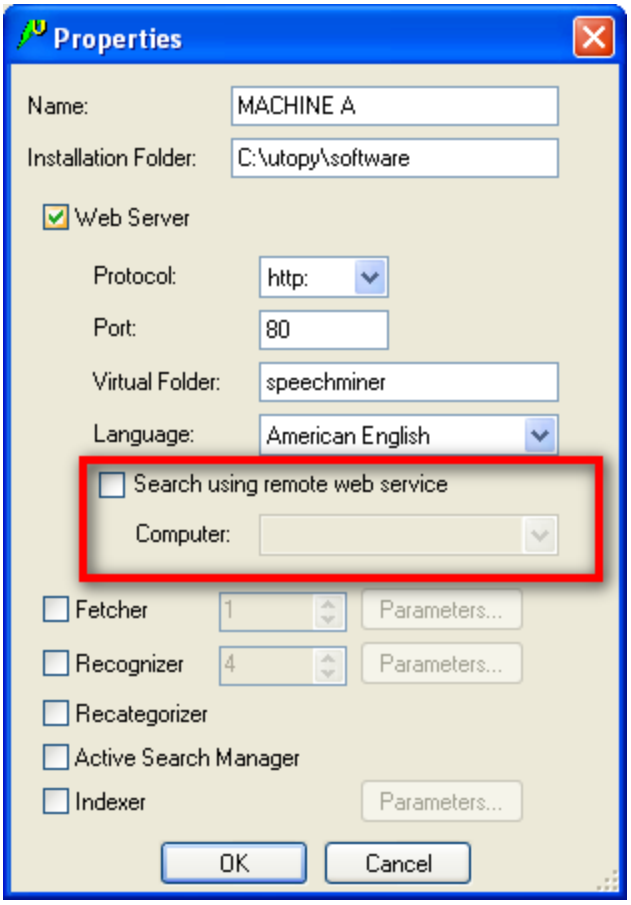
Remote Index Search

The index is a collection of system files so when SM needs to search calls in the index it needs to read those files from the hard drive. According to the index path it can be in a local hard drive or use windows sharing.

When the web machine and the index machine are on the same LAN there should not be a performance issue when accessing the system files, but when the web machine and the index machine are on different sites that connects over the internet accessing the system files directly with windows sharing can be slow especially when the index files are large.

To solve this issue each web machine can be configured to search the index files directly or using web service calls. This configuration can be changed in the computer properties window:

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.

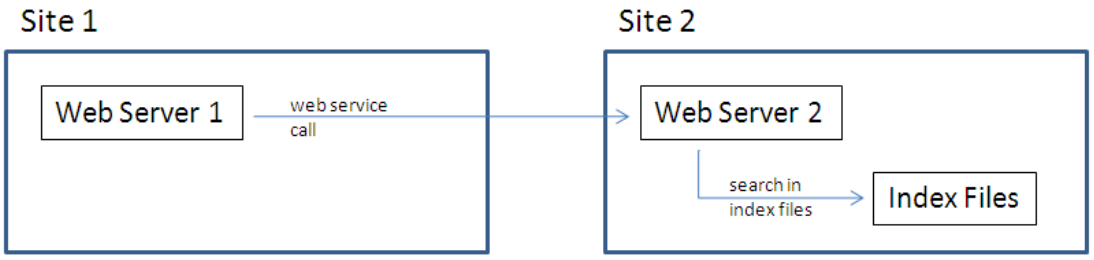


Each web server machine can be in one of the following modes:
1. If the 'Search using remote web service' check box is not checked - the machine will use the system index path and search the index files directly.
2. If the check box is checked you must select a web machine from the combo box and in that case the machine will not access the index files directly, instead it will call a web service method on the selected machine with a request to search the index files.

For example:

We have two sites one with web server and the seconds site contians the index files and a web server.

In this system we want to configure the web server in the second site to search the index files directly and the web server in the first site will search the index using web service calls to the web server in the second site:



The configuration in SMConfig should be as follows:

- Web Server 1 configuration - The 'Search using remote web service' check box is checked and the selected computer is 'Web Server 2'.

- Web Server 2 configuration - The 'Search using remote web service' check box should be unchecked.

Text Analytics

Please see Text Analytics installation and configuration Guide.

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.

VMWare Server configuration

When using Virtual Machines on VMWare Server VSphere4, it is recommended to use the Scheduling Affinity feature, which dedicates specific logical CPUs for specific VM's virtual CPUs, and improve the Recognition performance.
For each active Virtual Machine, check in the VM Settings how many CPUs are configured for the machine. In Setting\Resources tab\Advanced CPU\Scheduling Affinity, note the relevant serial numbers of the VMWare server logical CPUs.

CONFIDENTIAL. Copyright © 2012, UTOPY Inc. All rights reserved.