

Administrator's Guide for  
SpeechExec Enterprise  
Speech Recognition Service

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## Change history

Document version	Application version	Description
1.0	SEE 5.0	Initial document
1.1	SEE 6.0	Updated software requirements
1.2	SEE 6.1	New custom Dragon profile folder feature and Dragon Medical Practice Edition 4.0 & 4.1 compatibility

# 1 Overview

Speech Recognition Service automatically transcribes dictations using the Dragon NaturallySpeaking engine. The transcription process is as follows:

1. When Speech Recognition Service starts, it reads its configuration from the Central Enterprise Repository (SEERoot).
2. The service initiates Dragon NaturallySpeaking.
3. Speech Recognition Service takes a dictation from its input folder and hands it over to Dragon NaturallySpeaking for recognition.
4. The service waits for Dragon NaturallySpeaking to complete the transcription job. Depending on whether the transcription was successful or not, the service does the following:
  - If the dictation is successfully transcribed, the Speech Recognition Service attaches the recognized text in RTF format to the original dictation and sets dictation state to *Correction Pending*.
  - If the transcription process fails then the service removes the dictation from its queue and sets dictation state to *Transcription Suspended*.
5. The service takes the next dictation from the input folder.

## 2 System Requirements

### 2.1 Hardware requirements

Speech Recognition Service has the following hardware requirements:

- Minimum 2.2 GHz Intel **dual core** or equivalent AMD processor with 4 GB RAM
- 4 GB hard disk space (8 GB recommended)
- Microsoft .NET 4.6.1 Framework requires an additional 4.5 GB of free disk space.

### 2.2 Software requirements

For the supported operating system, we recommend that you apply the latest Service Pack available before installing Speech Recognition Service.

- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- Microsoft .NET 4.6.1 Framework

Speech recognition is supported with Dragon NaturallySpeaking, using the following Dragon editions:

- Dragon Professional 14 Group
- Dragon Professional 15, 15.5 Group

**Note:** Update from Dragon Professional 14 Group to Dragon Professional 15 Group is not supported!

**Important:** Dragon NaturallySpeaking must be installed and configured on the computer that runs the Speech Recognition Service. It is the administrator's responsibility to configure roaming settings if those are used as well as configure and train Dragon profiles.

It is not recommended to install Microsoft Office applications on the computer that runs Speech Recognition Service, especially not those applications that use Dragon NaturallySpeaking plugins. These applications are the following: Microsoft Word, Microsoft Excel and Microsoft PowerPoint.

**Note:** Dragon Home, Dragon Premium and their predecessor products are not supported with Speech Recognition Service.

**Important:** The built-in Administrator user account **must not** be used to run Speech Recognition Service since it is not supported by Dragon NaturallySpeaking.

## **2.3 Prerequisites of using the Speech Recognition Service**

The following preconditions must be met before you start using the speech recognition service:

- A Dragon NaturallySpeaking profile must be created and trained.
- Central Enterprise Repository (SEERoot) must be pre-configured in Enterprise Manager.
- A typist-role user must be created and properly configured in Enterprise Manager with the same name as the logon user specified for the service. Proper configuration includes setting up the license server, configuring an email, setting up templates and fine-tuning speech recognition.

## 3 How to set up the Speech Recognition Service

### 3.1 Set up the user account of the service

Windows services can be configured to run under the Local System, Local Service, or Network Service accounts, which have a built in right to log on as a service. Any service that runs under a separate user account must be assigned the right.

As the Speech Recognition Service is recommended to run under a separate user account, please follow the steps below *before* installation to make sure the user account for the service is configured properly:

- from the Start Menu, start "Local Security Policy" tool (`secpol.msc`)
- in "Security Settings", locate "Local Policies | User Rights Assignment"
- select the "Log on as a service" policy and double-click to open its properties
- add the user account you want to use for the Speech Recognition Server
- add the user account to the local 'Administrators' group, too

### 3.2 Installation

You must properly configure the Speech Recognition Service during installation as follows:

1. On the **Service configuration** page, specify the full path of the Central Enterprise Repository (SEERoot). Alternatively, click **Browse** and navigate to a folder.

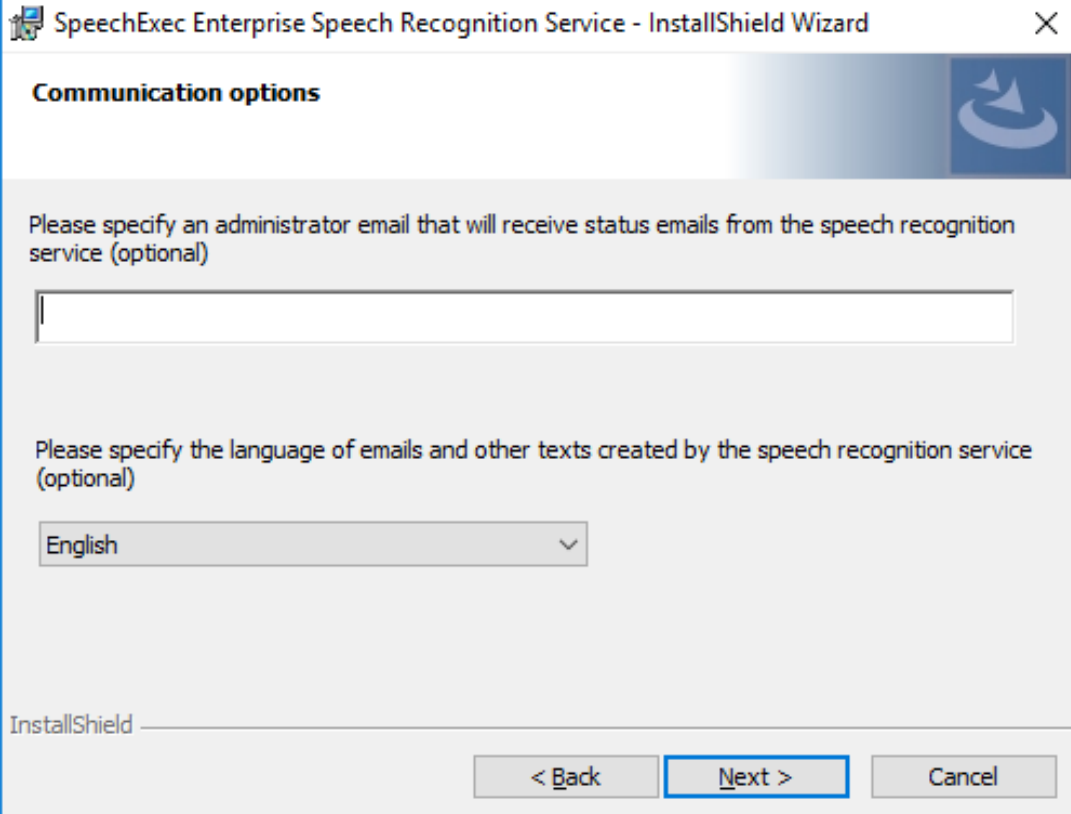
**Note:** The selected folder must be writable.

The screenshot shows the 'Service configuration' window of the 'SpeechExec Enterprise Speech Recognition Service - InstallShield Wizard'. The window has a title bar with the application name and a close button. Below the title bar is a header area with the text 'Service configuration' and a blue circular arrow icon. The main content area is divided into two sections. The first section is titled 'Please specify the full path of the central Enterprise repository:' and contains a 'Folder:' label, a text input field, and a 'Browse...' button. Below the input field is a note: 'Make sure that this folder is accessible for the Speech Recognition Service logon user.' The second section is titled 'Please specify the logon user account for the Speech Recognition Service:' and contains three input fields: 'Account name (DOMAIN\USERNAME):', 'Password:', and 'Password confirmation:'. Below these fields is a note: 'Make sure that this user account has access to the Enterprise repository specified above.' At the bottom of the window, there is a status bar with the text 'InstallShield' and three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a blue border.

2. Enter the account name and password of the Windows user who will run the service. If you run Speech Recognition Service in a Domain environment then you must enter the account name in DOMAIN\USERNAME format.

**Important:**

- The built-in Administrator user account must not be used to run Speech Recognition Service since it is not supported by Dragon NaturallySpeaking.
  - The user account must be granted the "Logon as a service" role, using the "Local Security Policy" tool – `secpol.msc` – of Windows (see 3.1).
3. Click **Next**.
  4. On the **Communication options** page, enter the e-mail address of the administrator who will receive e-mails about the status of transcription jobs.



The screenshot shows the 'SpeechExec Enterprise Speech Recognition Service - InstallShield Wizard' window. The title bar includes a close button (X). The window has a header bar with the text 'Communication options' and a blue circular arrow icon. Below the header, there is a text prompt: 'Please specify an administrator email that will receive status emails from the speech recognition service (optional)'. This is followed by a text input field. Below the input field, there is another text prompt: 'Please specify the language of emails and other texts created by the speech recognition service (optional)'. This is followed by a dropdown menu currently showing 'English'. At the bottom of the window, there is a status bar with the text 'InstallShield'. Below the status bar, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a blue border.

5. From the language selector drop-down box, select the language of:
  - the status e-mails
  - some dictation processing related error messages written to the log file
6. Click **Next**.

### 3.3 How to set up the License Server

Speech Recognition Service requires a separate license, called *Speech recognition service for Dragon* to work properly. To set the correct path to your License Server, do the following:



1. In the Enterprise Manager System Configuration Center, select a transcriptionist user who will act as the “virtual” typist and whose account you want to configure to send status e-mails.
2. Click **Edit user**.
3. Select **Transcriptionist** as a user role and click **Next**.
4. On the **Enterprise > Licensing** page, enter the host name and port number of the Enterprise License server that provides the *Speech recognition service for Dragon* license for your administrator.
5. Restart the Speech Recognition Service.

### **3.4 How to set up e-mailing for the Speech Recognition Service**

You must configure an SMTP profile in SpeechExec Enterprise Manager so that the Speech Recognition Service can send status e-mails to the administrator. Do the following:

1. In the System Configuration Center, select the “virtual” typist.
2. Click **Edit user**.
3. Select **Transcriptionist** as a user role and click **Next**.
4. On the **Delivery > Email** page, click **Add** to create a new SMTP / POP3 delivery e-mail profile, called *SRServer\_SMTP*
5. Click **OK** to continue.
6. On the **POP/SMTP Settings** page, configure the delivery e-mail profile and click **OK** to create the profile.
7. Click **Next** and then **Finish** to save your changes.

### **3.5 How to set up templates for the Speech Recognition Service**

The administrator must configure file specifications for template files that are accessible for the Speech Recognition Service. Speech recognition only supports .rtf templates.

1. In the System Configuration Center, select the “virtual” typist.
2. Click **Edit user**.
3. Select **Transcriptionist** as a user role and click **Next**.
4. On the **Rules > Templates** page, make sure that you have at least one template for the transcriptions in the **Existing templates** list. For information on how to add templates to the list, see the *SpeechExec Enterprise Transcribe help*.
5. Click **Next** and then **Finish** to save your changes.

## 3.6 How to configure the input folder in SpeechExec Enterprise Manager

Speech Recognition Service processes only those dictations that are stored in its input folder. You must configure this folder using Enterprise Manager following the steps below.

### Configuration steps:

- Open Enterprise Manager, log in, and open the “System Configuration Center”
- Select the “Groups and users” node
- Select the transcriptionist user that is running the Speech Recognition Service
- Press the “Edit user...” button and select the transcriptionist role, then next
- Navigate to the “Speech Recognition” node
- Select the “Offline recognition” sub-node
- In the “Speech recognition queue configuration” group, you need to enable “Automatically add the newly incoming dictation files...” option
- Add the desired input folder path to the “Path” textbox by browsing it using the “...” button, or by manually typing / pasting it in.
- If you want to process dictations located in first level subfolders of the desired path, check the “Add dictations from first level sub-folders as well” checkbox
- Save these new settings
- Restart the Speech Recognition Service (windows service)

## 3.7 Dragon NaturallySpeaking profile configuration

### 3.7.1 *How to configure Dragon profile folder when using supported Dragon versions in local/roaming mode*

#### 3.7.1.1 *Local mode*

In order to use a supported Dragon product in local mode with Speech Recognition service, the Dragon product itself must be configured to run in local mode. This configuration must be done using the Dragon product's configuration UI.

Speech Recognition service will read the configuration of the Dragon product during start-up and set the “root” profile folder path to the value that the installed Dragon product returns as ‘local profile folder path’ (ex: C:\ProgramData\Nuance\NaturallySpeaking15\Users). Profiles in this folder will be used for recognition, detailed in [‘Processing dictations’](#).

#### 3.7.1.2 *Optional: Local mode with custom Dragon profile folder*

The built in local profile folder path can be optionally overwritten using the custom Dragon profile folder feature described in [‘How to configure custom Dragon profile folder when using DMPE 4.x EU versions in local mode’](#).

### 3.7.1.3 Roaming mode

In order to use a supported Dragon product in roaming mode with Speech Recognition service, the Dragon product itself must be configured to run in roaming mode. This configuration must be done using the Dragon product's configuration UI.

During the roaming configuration, the administrator must specify a roaming directory where the Dragon profiles are or will be stored. Speech Recognition service only supports the first configured roaming folder, and will only use that folder to attempt to locate profiles during recognition.

The profile matching logic is detailed in the '*other supported Dragon products*' section of ['Processing dictations'](#).

### 3.7.2 How to configure custom Dragon profile folder when using DMPE 4.x EU versions in local mode

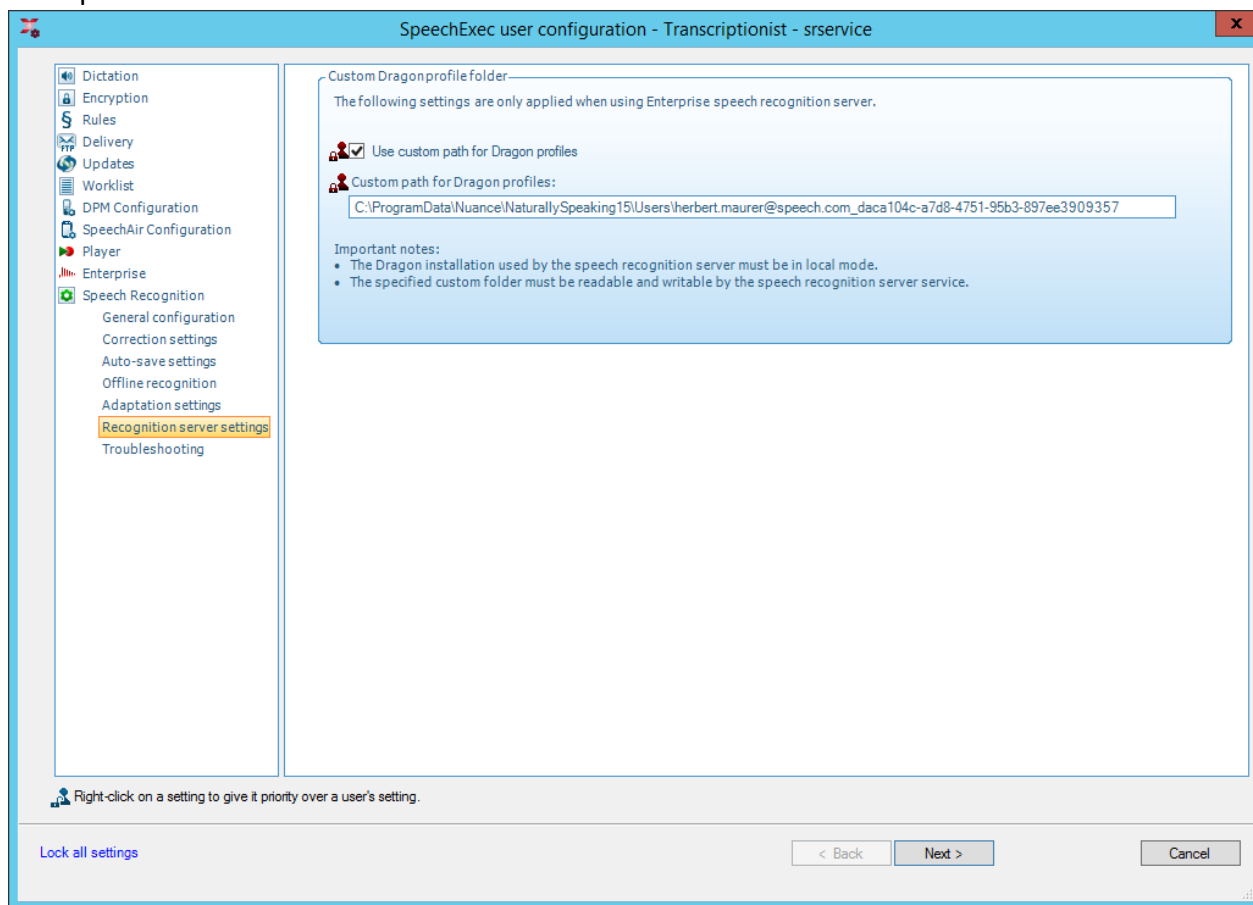
This feature allows using a custom Dragon profile folder for Enterprise Speech Recognition service when looking for Dragon profiles during speech recognition.

**Important:** This setting is mandatory when using Dragon Medical Practice Edition 4 (non-US versions) and above for speech recognition if local profiles are used (not roaming). If this setting is not configured when using the aforementioned Dragon products, Enterprise Speech Recognition service will not start. Please read the ['Processing dictations'](#) section, which contains a detailed explanation on how Dragon profile selection works for each dictation when using Dragon Medical Practice Edition 4 (non-US versions).

In order to configure this custom path:

1. In the Enterprise Manager System Configuration Center, select the transcriptionist user whose account you want to configure to use your personalized Dragon profiles.  
**Note:** The selected user must run the Enterprise Speech Recognition service.
2. Click **Edit user...**
3. Select **Transcriptionist** as a user role and click **Next**.
4. On the **Speech Recognition > General configuration** page, make sure that Dragon NaturallySpeaking is enabled.
5. On the **Speech Recognition > Recognition server settings** page, enable **Use custom Dragon profile folder** and set a valid path that contains your desired Dragon profiles. Make sure that this path is accessible for the Enterprise Speech Recognition service.

Example:



### 3.7.3 *How to configure Dragon profile folder when using DMPE 4.x EU versions in roaming mode*

Due to the changes introduced in Dragon Medical Practice Edition 4 (non-US version) and above, Dragon roaming must be configured in a specific way to allow Speech Recognition service to find the appropriate Dragon profiles for recognition.

The changes in profile naming and profile storage created the following compatibility issues:

- The Dragon roaming folder no longer directly contains Dragon profiles; it now contains what we call “profile container folders”. These folders are created using the login email address of the owner of the profiles, and a unique identifier.

**For example:**

- Roaming folder: \\server\DragonRoaming
- Login email: john.doe@company.com
- Container folder path: \\server\DragonRoaming\john.doe@company.com\_daca104c-a7d8-4751-95b3-897ee3909357

- The actual profiles are stored in these individual “container folders” and named using the login email and the language/region selected at profile creation (ex: [john.doe@company.com DEU DEU](#))

In order to Speech Recognition Service to be able to find these profiles, the administrator must set up Dragon roaming inside Dragon Medical Practice Edition 4.x (non-US version) and configure a **single** network roaming directory pointing to the root of the Dragon roaming profiles (using the examples above this would be: [\\server\DragonRoaming](#)).

Speech Recognition service will attempt to locate the appropriate Dragon profile in the “Container folders” located in this root path. Inside each container folder, a special profile-matching algorithm will be used, which is detailed in the ‘Dragon Medical Practice Edition (non-US)’ section of [‘Processing dictations’](#).

**Important Note:** The “Custom Dragon profile folder” feature is not compatible with roaming mode. The Dragon roaming folder is read from Dragon. Only the first found Roaming network directory will be used by Speech Recognition service.

### 3.8 How to send a test email

Speech Recognition Service can send a test e-mail to confirm that all settings are properly configured. To do so, follow the instructions below:

6. Record a dictation in DSS, DS2, WAV or MP3 format
7. Save the dictation as `SRSTestEmail_[CUSTOM_POSTFIX].[file_extension]`.

#### Notes:

- [file\_extension] must be DSS, DS2, WAV or MP3
- an underscore ( ) character must separate the fixed SRSTestEmail and [CUSTOM\_POSTFIX] file name parts
- [CUSTOM\_POSTFIX] can be any character or string that you would normally use in a file name

When Speech Recognition Service receives the dictation, it checks whether the dictation has the proper extension and creates an entry in the log if it is not. Otherwise, it verifies that the SMTP profile is properly configured and if so, then it sends a test e-mail to the administrator.

To configure an e-mail account in Enterprise Manager, see [How to set up e-mailing for the Speech Recognition Service](#).

## 4 How the service starts

When Speech Recognition Service starts, SpeechExec performs the following checks:

1. Checks presence and value of SEERoot key in the Registry that you have defined during setup. For more information, see 3.2.
2. Checks the integrity of SEERoot contents.
3. Locates and opens the XML profile with the proper filename.
4. Verifies that the Speech Recognition Service input folder is specified in the XML profile and is writable.
5. Reads typist-role license server settings from the XML profile.
6. Requests a *Speech recognition service for Dragon* type license from the specified license server.
7. Verifies that Dragon NaturallySpeaking is available.
8. Checks that in case the **custom Dragon profile folder** feature is used then it is configured correctly.
9. Checks the compatibility with Dragon Medical Practice Edition 4 (non-US) and above to make sure that in case of local mode, the **custom Dragon profile folder** feature is enabled.

If any of the above fails, Speech Recognition Service will not start and an entry indicating the blocking issue will be written to the log file of the service.

Speech Recognition Service checks other requirements as well, which will *not* block the service from starting. These are the following:

1. Checks if an SMTP email delivery profile is specified in user settings with the name: *SRTServer\_SMTP*.  
If it is, the service tries to log on to the specified SMTP e-mail server.
2. Checks if the Speech Recognition Service-specific dictation property definitions *SRTServerRecognitionResultCode* and *SRTServerRecognitionResultText* exist in the `PSP.SpeechExec.DictationPropConfiguration.xml` file stored in the Central Enterprise Repository (SEERoot) used by the service.

The Speech Recognition Service will start even if these checks fail, but an entry will be written to the log file that describes the reason of the error.

## 5 Processing dictations

The Speech Recognition Service works as follows:

The Service collects all dictation files that are eligible for speech recognition. These files are put into the local speech recognition queue of the Service.

A dictation must meet all the following requirements so that the Service can handle it:

- Must be accessible
- Must be in *Transcription Pending* state
- Cannot be encrypted
- Cannot be a Dragon NaturallySpeaking .DRA file
- Cannot have zero length
- Cannot be a SpeechLive speech recognition dictation

If any of the above conditions are not met, Speech Recognition Service will skip that file.

Otherwise, the service starts processing the dictation and changes the state of the dictation to '*Transcription in Progress*'.

Before actually processing a dictation file, the service will attempt to load a Dragon profile for speech recognition. To find the relevant Dragon profile, Speech Recognition Service will always use the value of the 'Author' property, usually stored in the XML metadata file of the dictation or in the proprietary DSS header of the audio file (if the header exists).

Using the 'Author' property, the following logic is executed to find the matching profile:

### **When using Dragon Medical Practice Edition 4 (non-US version):**

This version of Dragon introduced a new Dragon profile-naming scheme. Profile names are now essentially email addresses with languages attached to them, for example:

- john.doe@techcompany.com\_English\_United Kingdom
- or
- john.doe@techcompany.com\_ENG\_GBR

depending on the version of Dragon Medical Practice Edition and whether it is used in **local** or **roaming** mode.

In attempt to select the matching profile for the dictation that is being recognized, Speech Recognition Service will

- Take the value of the 'Author' property of the dictation
- Creates 'tokens' of the property by splitting it at ' ' (single space) characters
- Uses these 'tokens' to search the list of Dragon profiles for a matching profile
  - A matching profile is where all of the 'tokens' are found in the profile name using a case-insensitive matching

- Multiple matches can occur; in this case the 'Author' name must be extended with additional information to narrow down this search (for example adding the language of the profile)
- If a single match is found, that profile will be used for the recognition
- If multiple matches are found, the profile selection will fail with an error (logged)
- If no profiles are found, the profile selection will fail with an error (logged)

Examples of profile names and matching results by this logic:

**Profile names:**

- 1.) john.doe@techcompany.com\_Francais\_France
- 2.) john.doe@techcompany.com\_English\_United Kingdom
- 3.) sarah.smith@techcompany.com\_Francais\_France
- 4.) sarah.smith@techcompany.com\_English\_United Kingdom

**Results:**

Author property value	Result
John	Error: multiple matches
John Francais	Success: profile #1
Sarah Smith Fra	Success: profile #3
sArAH S	Error: multiple matches
Sarah_smith	Error: no profile found

**When using other supported Dragon products:**

A Dragon profile with a name that exactly matches the "Author" property set for the dictation will be used during the recognition process.

If an error occurs during speech recognition, the state of the dictation is changed to Transcription Pending and the description of the error is written to the log file of Speech Recognition Service. The administrator also receives an e-mail about the error provided that the e-mail address is configured properly. For information on setting up an e-mail account, see [How to set up e-mailing for the Speech Recognition Service](#).