# estos Search Interceptor

1.1.6.37535

# 1   Welcome to estos Search Interceptor

For a quick and sucessful installation, please read the information about installation

Search Interceptor extends the contact search of the Skype for Business® Client with the results of estos MetaDirectory. Using MetaDirectory and Search Interceptor, any contact data can be integrated in Microsoft® Skype for Business®.

Normally you can only search databases saved locally on the computer via the Skype for Business® Desktop Client. This data is usually updated every day. In contrast to this, when using Search Interceptor, databases from the MetaDirectory server are searched in real-time and not in the locally cached data.

Search Interceptor is installed on the Lync® Frontend Server. Search queries are transferred to estos MetaDirectory via this. Together with just the search result, the WebService of MetaDirectory in conjunction with Phone Tools can extend the conversation window at the Lync® Client with any data that relates to the contact found. In this way, you can interlink the Skype for Business® Client in ERP and CRM.

For Skype for Business® Desktop Clients to be able to use this service, certain settings of the Skype for Business® users must be changed. The entire configuration can be made via the Search Interceptor Administration.

The Help available will guide you through the installation and configuration of Search Interceptor.

- Find out how to install estos Search Interceptor under Installation.

- The individual setting pages of the estos Search Interceptor administration are described in chapter Settings.

The following symbols are used in the Help:

| Symbol | Meaning |
|:---:|---|
| ➡ | Note |
| ⚠ | Warning, Caution |
| ⬆ | Change compared with older versions |

All stated products and product names are brands, registered trademarks or the property of the respective manufacturer. Microsoft®, Skype for Business® are either registered tradmarks or trademarks of the Microsoft® Corporation in the United States of America.

# 2   Installation

Search Interceptor must be installed on each Skype for Business® FrontEnd Server.

Together with Search Interceptor, a estos MetaDirectory is required which assumes the contact data connection.
estos MetaDirectory is a Meta-Directory that enables a central collection of employee and customer information. As a result, organizations can combine their existing distributed databases into one global information service based on the Lightweight Directory Access Protocol (LDAP). The automatic synchronization due to the replication process combines the existing employee and customer data from different contact data sources. The advantage of MetaDirectory compared with conventional databases is the very fast access speed and the high availability, even during the synchronization phase.

estos MetaDirectory can be installed on any server. Search Interceptor must be able to contact MetaDirectory (TCP Ports 712 or 714, details about the configuration of MetaDirectory in the Data Sources Settings)

Search Interceptor requires version 4 of Microsoft® .net Framework. If it is not already installed, it is automatically downloaded and installed during installation.

Start the Setup and follow the instructions. After installation, the Setup wizard starts automatically.

The individual settings pages of the Search Interceptor administration are described in the chapter Settings.

## 2.1   System requirements

Supported systems:

Server:

- Microsoft® Lync® Server 2010 and Microsoft® Skype for Business® Server 2013
- on Windows Server® 2008 R2 or Windows Server® 2012

Client:

- Microsoft® Lync® Client 2010
- Microsoft® Lync® Client 2013
- Skype for Business® for Business Client 2013
- Skype for Business® for Business Client 2016
- Microsoft® Lync® App for Windows® 8
- Microsoft® Lync® App for Windows® 8.1
- on Windows® 7, 8, 8.1

estos MetaDirectory - estos Phone Tools:

- You will require the latest version of a MetaDirectory. The WebServer of MetaDirectory provides the conversation window extensions on the Skype for Business® Desktop Client (in conjunction with Phone Tools).
  In conjunction with Search Interceptor, therefore only use released versions of MetaDirectory (the download package generally includes a compatible version).
  The same applies for estos Phone Tools that is also required in its current version and is generally included in the download package.

# 3 estos Search Interceptor Administration

estos Search Interceptor Administration is divided into the following sections

| Section | Explanation |
|---|---|
| General | General settings of Search Interceptor |
| Policy | Configuration of the Skype for Business® Policys |
| User | Assignment of policies to Skype for Business® users |
| Data source | Configuration of the estos MetaDirectory connection |
| Events | Logging and problem analysis, create service support file |
| Info about… | Version information |

You can also find further information in the chapter Troubleshooting.

## 3.1 General settings

The Microsoft® Skype for Business® Client differentiates whether it is connected internally or externally (e.g. via the Internet) with the Skype for Business® Server. You can search separately for clients that are in the company network or outside of it:

Extend internal Skype for Business® search
The use of the extended search is enabled within the company network.

Extend external Skype for Business® search
The use of the extended search is enabled outside of the company network via the Edge Server.

If neither of the two options is activated, the search extension remains inactive.

> ➡ Please note that clients already connected with the Skype for Business® server must be reconnected with the server after changing the settings to apply these changed settings.

## 3.2 Policy settings

For Skype for Business® users to be able to use the extended search of Search Interceptor, the Lync® Desktop Client must send search queries directly to the Skype for Business® Server. Lync® Mobile Clients, as well as the Windows® 8 App, already process their search queries via the Skype for Business® Server as standard.

For search queries to be sent to the Skype for Business® Server, policies must be configured for the *AdressBookAvailability WebSearchOnly*. In a second step, these policies are assigned to Users who may use the contact search.

For all users that were not assigned a policy, the Global Policy applies. By activating the checkbox Activate Search Interceptor for all users who are not assigned a policy, Search Interceptor is activated in the global policy.

If policies have already been created on the Skype for Business® Server, they are displayed in the Skype for Business® Policies table. The Active column shows whether the users of this policy can access Search Interceptor.

You can add new policies and change existing policies.

> ➡ Please note that clients already connected with the Skype for Business® server must be reconnected with the server after changing the settings to apply these changed settings.

## 3.3 User settings

The table shows the users of the Skype for Business® Server. A blue symbol in the "Active" column marks the users for which the extended search is active. This can either occur via the policy stated in the Policy column or the Global Policy.

> ➡ Please note that clients already connected with the Skype for Business® server must be reconnected with the server after changing the settings to apply these changed settings.

## 3.4 Data sources settings

In the settings for the data source, estos MetaDirectory is configured which provides the contact data for the extended search. A search in the local network for installed MetaDirectory servers can be made via "Search". Alternatively the server name and port can be entered manually.

Force LDAPs SSL encrypted connection
Search Interceptor only makes a connection to MetaDirectory when it outputs a valid certificate like the one that was contacted via the host name.

LDAP root password
Enter the LDAP Root password here if access to MetaDirectory is protected.

> ⚠ Due to the abstraction of the search queries of the Skype for Business® Client in the Skype for Business® Frontend WebService, MetaDirectory cannot check User Credentials. During the query, MetaDirectory communicates which user made the query. Here the user profile is searched for and the authorizations for different databases determined. The LDAP Root Passwort entered here protects MetaDirectory from unauthorized queries.

### 3.4.1 MetaDirectory configuration

For the various databases of MetaDirectory to be able to be assigned to the respective users, the user administration in MetaDirectory must be activated. To do this, under *User Administration - User Database*, select the option *User Administration with Active Directory®* and enter the required access data.

Afterwards activate the users who may use Search Interceptor. During activation of the user administration, as many users as licenses are available are automatically activated.

The access profile „*Default*" is initially assigned to the users. This access profile contains all databases of MetaDirectory. To restrict the search, you may have to create new profiles that contain fewer databases.

> ➡ estos MetaDirectory is a Meta-Directory that enables a central collection of employee and customer information. As a result, organizations can combine their existing distributed databases into one global information service based on the Lightweight Directory Access Protocol (LDAP). The automatic synchronization due to the replication process combines the existing employee and customer data from different contact data sources. The advantage of the MetaDirectoy compared with conventional databases is the very fast access speed and the high availability, even during the synchronization phase.

## 3.5   Events

Search Interceptor writes an event log in the installation directory in the subdirectory Logs as standard. Here you can determine the type of events logged, For normal operation, errors and warnings should be logged. Detailed log settings such as *Log all* have a negative effect on performance and should only be temporarily used for error analysis. Separate log files are written for internal and external search queries.

The currently configured log directory is displayed under *Directory:*. With the aid of the **Browse...** button, a different directory can be chosen. 10 log files are kept as standard. If the option *"Archive old logs (do not delete)*" is activated, old logs are no longer overwritten and are kept in the above stated directory.

If problems occur with Search Interceptor, you can create a ZIP archive (prepare log file) with all the information for further analysis of the issue here. You also have the option to manually delete the log files to log specific error scenarios.

In the Windows® event log section, you can determine whether errors and warnings should also be written in the Windows® event log.

## 3.6   Field Mapping Skype for Business® / MetaDirectory

The search extension fills the fields of the Skype for Business® Client with content from fields of MetaDirectory. The following assignments are made here:

| Skype for Business® | MetaDirectory |
|---|---|
| GivenName | Firstname |
| Name (sn) | Lastname |
| DisplayName | DisplayName |
| MailNickname | Email |
| PrimaryUserAddress | SIPAddress |

| | |
|---|---|
| TelephoneNumber | Phonebusiness |
| HomePhone | Phonehome |
| Mobile | PhoneMobile |
| Mail | Email |
| ProxyAddresses | Email |
| Department | Department (only displayed if the title is not filled) |
| Company | Company |
| OtherHomePhone | PhoneHome2 |
| OtherMobile | RadioTelephoneNumber |
| OtherTelephone | Phonebusiness2 |
| IPPhone | TtyttdTelephoneNumber |
| PhysicalDeliverOfficeName | Company |
| Title | JobTitle |
| Description | Body |
| ManagedBy | OfficeRoomNumber |

## 3.7 Troubleshooting

License / MetaDirectory Version:

Search Interceptor does not have its own licensing. Licensing takes place via estos MetaDirectory, version 3.5 or higher. You will require an Enterprise license to be able to use Search Interceptor. If errors occur with regard to the connection licensing, the following error messages can appear:

If Search Interceptor can not make a connection to MetaDirectory for the configuration, the configuration cannot be saved.

The following error messages can appear here:

The user management of MetaDirectory was not activated
Search Interceptor requires an activated user administration in MetaDirectory. Activate the user administration in MetaDirectory. Details can be found in the chapter Configuration of MetaDirectory.

The DNS name of MetaDirectory could not be resolved.
Check whether the configured DNS name IP addresses can be resolved.

MetaDirectory could not be accessed.
Check whether MetaDirectory can be accessed under the specified DNS name, IP address.

The Powershell command ... could not be executed. Error message: ...
To export the configuration of the Skype for Business® Server, Powershell commands are used. If the command fails, an error message of this type is generated. A similar message can also occur for other configuration steps. Try to call up the Powershell command on the Skype for Business® Server via the Skype for Business® Powershell. If you receive the same error message here, this indicates a basic problem with your Skype for Business® Server. If the command can be executed in the Skype for Business® Powershell without problem, try to save the settings again. Sometimes problems only occur temporarily, for example when the associated Active Directory® Server cannot be accessed for a short time. If the command in the Skype for Business® PowerShell be easily executable, try the settings again to save. Sometimes problems occur only temporarily, for example when the associated Active Directory® Server momentarily can not be reached.

Other possible error sources:

Skype for Business® Client Search does not provide any results
To check whether MetaDirectory generally provides data for a Skype for Business® user, open the webpage of MetaDirectory in a web browser http://servername_or_ip/ on the computer of the user. If the page cannot be displayed, check the connection to MetaDirectory. If the page is displayed, search for a contact that you know is located in the database of MetaDirectory.

If the webpage of MetaDirectory provides the expected data but not the Skype for Business® Client, restart the Skype for Business® Client. Beforehand you should make sure that the system time on the Skype for Business® Client and the Skype for Business® Server are synchronized. Otherwise it may occur that you are logged on the Skype for Business® Server via a saved profile but a changed setting is not transferred to the client.

Error 403 access denied
The user does not have authorization for the search in MetaDirectory. Please check in MetaDirectory whether the logged-in user is activated.

Which changes are made in the web.config of Skype for Business®?
The relevant web.config under C:\Program Files\Microsoft® Skype for Business® Server 2013\WebComponents\Group Expansion\Int bzw. C:\Program Files\Microsoft® Skype for Business® Server 2013\Web Components\GroupExpansion\Ext is extended with the following content:

```
<appSettings>
<add key="MetaHost" value="APP.Skype for Businesstest.local" />
<add key="MetaHostPort" value="712" />
<add key="PSCVersion" value="1.0.0.26158" />
<add key="UseDataSourceLdaps" value="False" />
<add key="UseDataSourceCredentials" value="False" />
<add key="DataSourcePass" value="" />
<add key="Share" value="share" />
<add key="WebServiceId" value="1-WebServices-1" />
</appSettings>
<behaviorExtensions>
<add name="estosSearchConnector" type="estos.Phonetools.Skype for
BusinessServer.SearchConnector.SearchBehaviorExtensionElement,SearchConnect
or" />
```

```
</behaviorExtensions>
<serviceBehaviors>
<estosSearchConnector />
</serviceBehaviors>
```

Search Interceptor can be completely deactivated by removing the internal and external search in General Settings. After saving the deactivated configuration, the changes are undone in the web.config as well as for the deinstallation of the product. For backup, the administration tool creates a copy of the original Web.config in the same directory under the name "Web.config_original_estos". This allows the original web.config to be restored by renaming.

# 4 About estos Search Interceptor

estos Search Interceptor is a product of estos GmbH.

Copyright (C) 2015 estos GmbH.

Product updates, please visit http://www.estos.de/

Frequently Asked Questions, as well as support, can be found under http://support.estos.de

Microsoft® and Microsoft Outlook® are either registered trademarks or trademarks of Microsoft® Corporation in the United States of America.

Active Directory®, Lync®, Microsoft Outlook®, Microsoft®, Skype for Business®, Windows Server®, Windows® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

MetaDirectory is either a registered product or product of estos GmbH in Germany and/or other countries.

All brands and product names used in this document are for identification purposes only and may be trademarks or registered trademarks of their respective owners.