



Installation Manual

Version: 1.4.1

For the Lookeen Server 1.01.966 and up

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1. How to use this Manual?

This manual will guide you through the installation and configuration of the Lookeen Server.

Chapter 2 (Overview) provides you with an overview of the functionalities of the Lookeen Server and its [features](#). In this chapter, in depth explanations of the structure of its [system components](#) (Lookeen Server Gateway (LSGW), Lookeen Server Indexer Service (LSIS) and Lookeen Server Management Console (LSMC)) will be provided.

Chapters 3 & 4 cover all of the [hardware](#) and [software](#) requirements. In chapter 5, this manual will guide you through all the steps of the [installation](#) of the Lookeen Server. To install the Lookeen Server Software you need to carry out the installation and configuration of all three system components (LSIS, LSGW, LSMC) separately. In order to do so, you need to follow the instructions of this manual step-by-step. Steps 1 through 4 explain the Exchange Server impersonation process of the [Lookeen Server Indexing User \(LIU\)](#), and the installation of the Lookeen Server software itself. Step 5 through 7 will explain the installation, configuration and testing of all three of the Lookeen Server system components.

After having installed the Lookeen Server, you can verify the configuration in the [test mode](#) before the full scale rollout. Chapter 6 will explain how to set up the test mode within the Lookeen Server. In case you want to supervise the indexing process of the Lookeen Server from time to time, chapter 7 will explain how to use the [supervision](#) settings while the Lookeen Server is indexing your company data.

Finally, you'll need to [connect every Lookeen client](#) in your company to the Lookeen Server. This procedure is covered in chapter 8. If you're looking for some tips on how to increase the performance of your Lookeen Server Index, please consult chapter 9. For further questions and answers, the FAQs are listed in chapter 10. If you cannot find the answers you are

looking for, do not hesitate contact us at support@lookeenserver.com.

Please note: If you wish to customize the configuration parameters of the Lookeen Server installation please contact us at support@lookeenserver.com.

2. Overview

The Lookeen Server provides centralized access to enterprise- wide information sources for Exchange Server based data and file system based data. The Lookeen Server works seamlessly with the Lookeen client software. In combination with the Lookeen client, the server allows users to search files, e-mails, public folders, contacts, appointments and tasks quickly and effectively throughout the entire enterprise network without the need for client- based indexing. The centralized indexing reduces the load and traffic on Exchange Servers and network infrastructure, conserving processor and memory resources on both servers and clients.

If a user starts a search query, the gateway grants access to the user to all relevant search results in the central index, keeping in mind the users Active Directory and Exchange Server permissions. Individual users can now search personal and external sources simultaneously within their own Lookeen index authority.

2.1. Features

- *Create and manage one centralized index, that can be accessed with Lookeen Enterprise Edition clients*
- *Full administrative control over indexing volumes, structures, and schedules*
- *Centralizes control by group policies*
- *Easy installation of both servers and clients*
- *Highest security by storing the Windows permission (Active Directory rights) structure in the index itself*
- *Encrypted indices and communication*
- *Indexing Exchange Server 2007, 2010, 2013 and Exchange Online (Public Folders and Private Mailboxes)*
- *Indexing network files*
- *Time-controlled central indexing*
- *Seamless integration with the Lookeen client (Enterprise Edition)*
- *High availability, due to running as a web service*

2.2. System Components

The Lookeen Server system consists of three main components: the Lookeen Server Indexer Service (LSIS), the Lookeen Server Gateway (LSGW) and the Lookeen Server Management console (LSMC).

a) Lookeen Server Indexer Service (LSIS)

The LSIS is a Windows service, which constantly indexes all configured data sources for all configured users and writes them to a centralized index. The LSIS sources are Exchange Server based Public Folders (PF) and Private Mailboxes (PM) as well as Files System (LF) sources. The LSIS indexes all data along with their user permissions.

All three data sources are indexed simultaneously in so called "indexing runs". When an indexing run is finished, the next run starts after a customizable amount of time (e.g. 15 seconds). "Watermarks" show the LSIS, what data is already indexed and which data is new and needs to be indexed. User changes will be detected at the start of the next indexing run ("delta indexing").

By default the LSIS indexes every user who is listed in the active directory. New users will be indexed as soon as they appear - with no further need to change any settings.

b) Lookeen Server Gateway (LSGW)

The LSGW is a .NET 4.0 (up to Windows Server 2008 R2) or .NET 4.5 (Windows Server 2012 and later) web application (WCF service). The LSGW handles search requests of the connected Lookeen clients, performs the index search and returns the search results to the requesting clients.

c) Lookeen Server Management-Console (LSMC)

The LSMC is a Windows application for the administration of the Lookeen Server to configure and test the server settings.

3. Hardware requirements

Component	Requirement
Processor	<ul style="list-style-type: none">• Minimum: 1 GHz (x86 processor) or 1.4 GHz (x64 processor)• Recommended: 2 GHz or faster
Memory	<ul style="list-style-type: none">• Minimum: 1 GB RAM• Recommended: 2 GB RAM or greater

4. Software requirements

- Windows Server 2003 or a later version (English or German language versions only
 - Active Directory Domain member (installing the Lookeen Server on a domain controller is **not** supported)
 - Internet Information Server (IIS) installed + additional IIS Role Service Windows Authentication (under Security) enabled
 - Additionally on WindowsServer 2012 or later:
Feature “.NET Framework 4.5 Feature\WCF Services\HTTP Activation”
- Exchange Server 2007 SP1 or a later version (Exchange Server 2003 is not supported)
- .NET Framework 4.0 (extended) a later version.
.NET Framework 4.0 Download link:
<http://www.microsoft.com/download/en/details.aspx?id=17851>

Please note: If .NET Framework 4.0 is already installed when you install the IIS Server Role, you may need to re-register it after the IIS installation: open a windows command prompt and run the following command:

```
C:\Windows\Microsoft.NET\Framework64\v4.0.30319\aspnet_regiis.exe -ir
```

Lookeen Client Enterprise Edition, Version 8.2.2.5088 or later

5. Installation of Lookeen Server

To install the Lookeen Server you need to carry out the installation and configuration of all three system components (LSIS, LSGW, LSMC) *separately*. In order to do so, you need to follow the instructions of this manual step-by-step.

- Steps 1 through 4 – Exchange Server impersonation of the Lookeen Server Indexing User (LIU) and installation of the Lookeen Server software itself.
- Steps 5 through 7 – Installation, configuration and testing of all three of the Lookeen Server system components.

5.1. Step 1: Create Lookeen Indexing User (LIU)

Create the LIU (a dedicated Active Directory domain user account) through Active Directory Users and Computers console.

Make sure that the user logon name of the LIU domain user account is ***lookeenserver_acc***.

5.2. Step 2: Enable Exchange Impersonation for LIU

In order for the Lookeen Server to index your Exchange Server resources, you need to enable Exchange Impersonation for the LIU.

Please note: For security reasons the LIU should **NOT** be a member of the Active Directory domain administrator group.

a) Exchange Server 2007:

If you use Exchange Server 2007, you need to add **two** new management roles for the LIU account (***lookeenserver_acc***). To achieve this, you must use the Exchange Management Shell.

The user identity determines the first name and last name of the LIU domain user account as specified during the creation of the LIU (Chapter 5.2 Step 1).

In this example the first name of the LIU is ***Lookeen*** and its last name is ***Server***.

You need to customize the script according to the first name and last name you provided during the creation of the LIU (Chapter 5.2 Step 1).

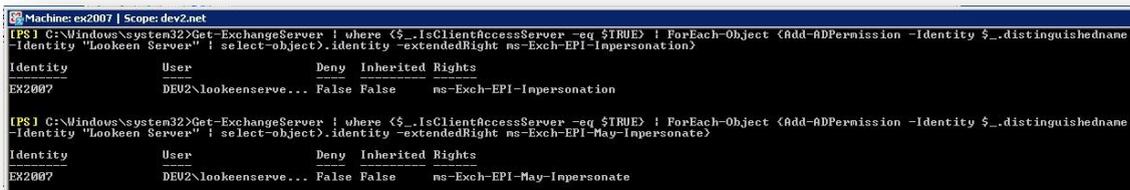
```
Get-ExchangeServer | where {$_.IsClientAccessServer -eq $TRUE} |
```

```
ForEach-Object {Add-ADPermission -Identity $_.distinguishedname -
User (Get-User -Identity "Lookeen Server" | select-object).identity
-extendedRight ms-Exch-EPI-Impersonation}
```

```
Add-ADPermission -Identity
(get-exchangeserver).DistinguishedName -User
(Get-User -Identity Ex2007 |
select-object).identity -AccessRights GenericAll
-InheritanceType Descendants
```

And

```
Get-ExchangeServer | where {$_.IsClientAccessServer -eq $TRUE} |
ForEach-Object {Add-ADPermission -Identity $_.distinguishedname -
User (Get-User -Identity "Lookeen Server" | select-object).identity
-extendedRight ms-Exch-EPI-May-Impersonate}
```



Screen 1 - Exchange Server 2007 Impersonation

b) Exchange Server 2010 or later:

If you use Exchange Server 2010 or later, you only need to add **one** management role for the LIU account (*lookeenserver_acc*). To achieve this, you must use the Exchange Management Shell.

```
New-ManagementRoleAssignment -Name:LookeenImpersonate
-Role:Applicationimpersonation -User:lookeenserver_acc
```



Screen 2 - Exchange Server 2010 Impersonation

For more information please visit:

[http://msdn.microsoft.com/en-us/library/bb204095\(v=exchg.140\).aspx](http://msdn.microsoft.com/en-us/library/bb204095(v=exchg.140).aspx)

c) Exchange Online (Exchange 365)

On a Microsoft hosted Exchange Server, you need to create a new user **lookeen_online@yourdomain.onmicrosoft.com** first and then assign the management role to this user:

```
New-ManagementRoleAssignment -Name:LookeenImpersonate  
-Role:Applicationimpersonation -User:lookeen_online
```

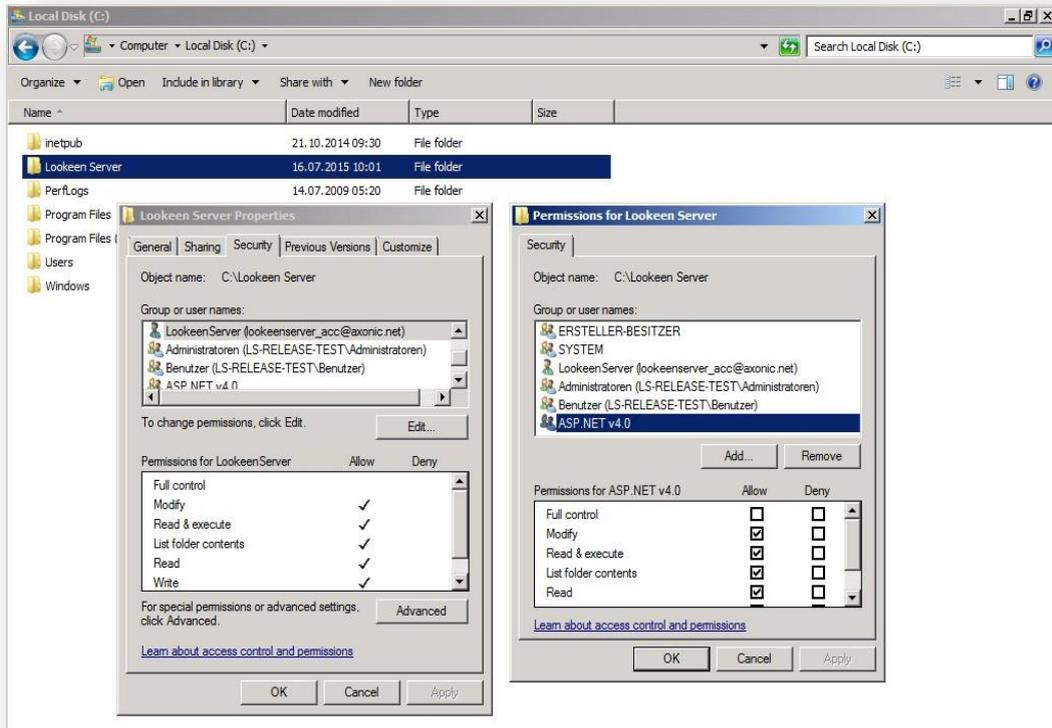
5.3. Step 3: Installation of the Lookeen Server software

Run the LookeenServer.X.X.X.XXX.exe. During the setup routine you need to specify the directory to which the Lookeen Server software will be installed (e.g. **C:\LookeenServer**). This will be the Lookeen Base Directory (LBD).

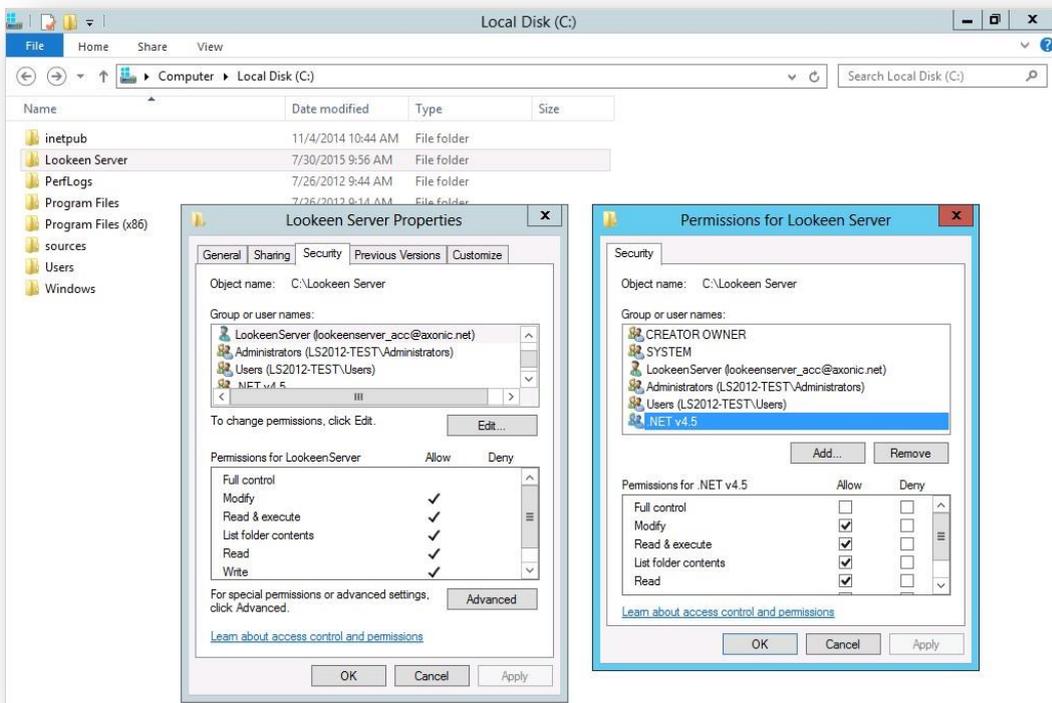
5.4. Step 4: Grant Directory Access for LIU and IIS AppPool

Add the LIU domain user account (**lookeenserver_acc**) and the .NET identity (IIS **AppPool\ASP.NET v4.0** on Windows Server up to 2008 R2, **IIS AppPool\ .NET v4.5** on Windows Server 2012 or later) to the Lookeen Base Directory (LBD) directory you specified in **Step 5.3**, and grant those two user accounts write and change NTFS permissions on the LBD..

Please note: This "IIS AppPool\ASP.NET v4.0" resp. "IIS AppPool\ .NET v4.5" user is a predefined local windows user account on your Lookeen Server machine which is **not** displayed when you search the local accounts. Therefore you need to change the **Location** in the **Select Users or Groups** dialog to the local machine and then type its complete name exactly as given above (without the quotes) into the '**Enter the object names to select**' field.



Screen 3 - Grant Directory Access for LIU and IIS AppPool on Windows Server 2008 R2



Screen 4 - Grant Directory Access for LIU and IIS AppPool on Windows Server 2012

- In the next steps, you are going to create and configure the three system components of the Lookeen Server.

5.5. Step 5: Create the Lookeen Server Indexer Service (LSIS)

Create a new Windows Service. In the command prompt create a new Windows Service which calls the *LSExplorer.exe*. The name of the Windows Service must be *LookeenIndexer0*.

Please enter within an elevated command prompt:

```
sc create LookeenIndexer0 binpath= "C:\Lookeen  
Server\Indexers\Indexer0\LSExplorer.exe"
```

Important: Make sure there is a space after binpath=" "



```
Administrator: Command Prompt  
C:\Users\Administrator>sc create LookeenIndexer0 binpath= "C:\Lookeen Server\Indexers\Indexer0\LSExplorer.exe"  
[SC] CreateService SUCCESS  
C:\Users\Administrator>_
```

Screen 5 - Space after binpath=" "

Alternatively, you can also use Windows PowerShell to create the new Windows Service.

Please enter in Windows PowerShell:

```
new-service -name LookeenIndexer0 -binaryPathName "C:\Lookeen  
Server\Indexers\Indexer0\LSExplorer.exe"
```

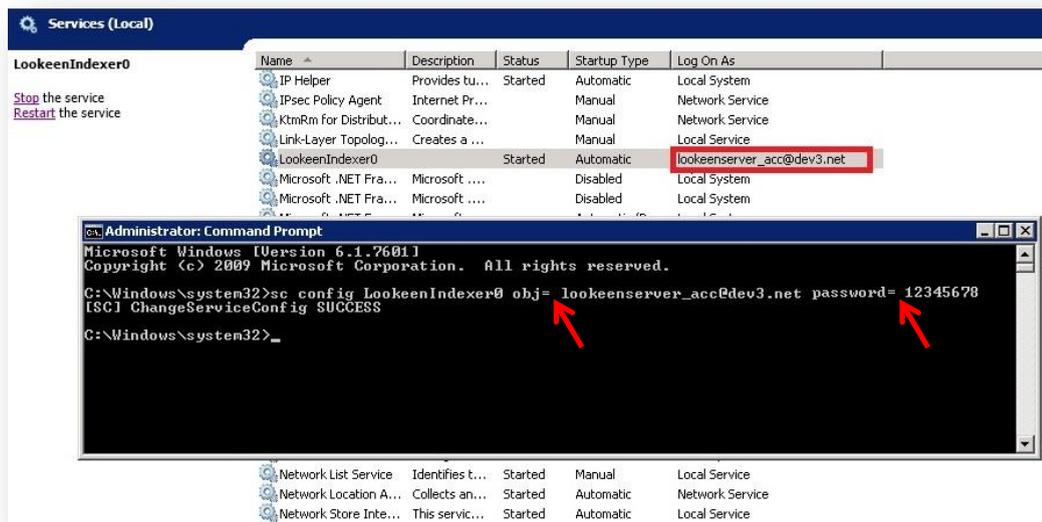
To make sure that the LSIS has sufficient permissions, you need to change the account the windows service runs with from **Local System** to the LIU (**lookeenserver_acc**).

Important: DO NOT start the Windows Service after you have carried out this procedure.

Please enter within an elevated command prompt:

```
sc config LookeenIndexer0 obj= lookeenserver_acc@<yourdomain> password= <yourPassword>
```

Important: Make sure you have a space after obj=" " and password=" "



Screen 6 - CMD command: Please ensure the space after obj=" " and password=" "

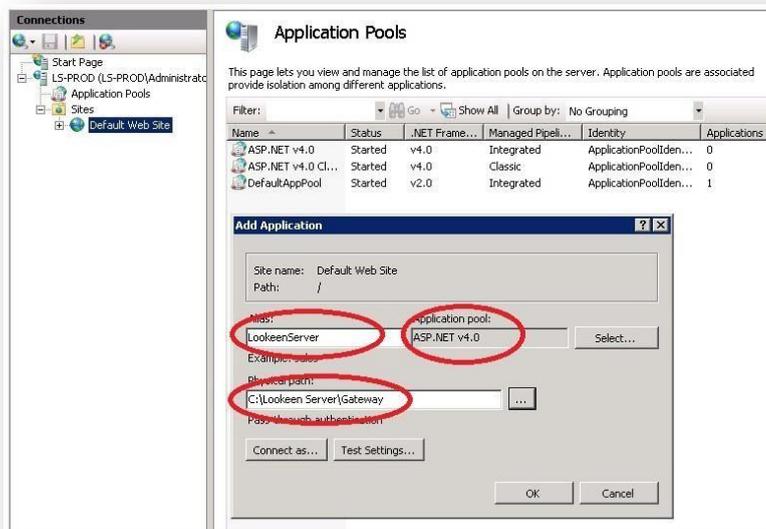
5.6. Step 6: Create the Lookeen Server Gateway (LSGW)

The Gateway is the connecting component between the Lookeen clients and the Lookeen Server index.

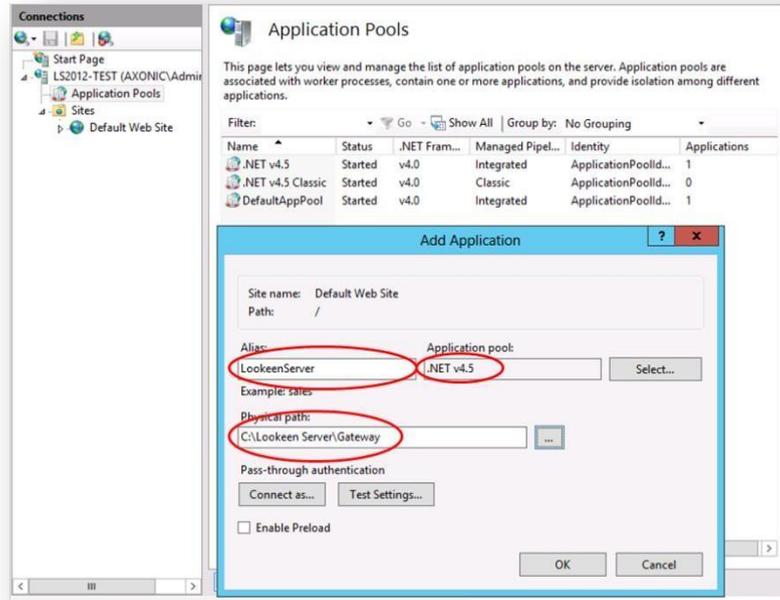
1. Create application

Open the Internet Information Server (IIS) management console and create a new application for the Lookeen Server Gateway: Right-click the “Default Web Site” and select “Add Application”. Verify that the name of the new application is **LookeenServer**. Make sure you select the **ASP.NET v4.0** (Windows Server up to 2008 R2) or **.NET v4.5** (Windows Server 2012 or later) application pool. Specify the physical path to the **Gateway** folder of the Lookeen Base Directory (LBD) as specified in **Step 5.3** **Step 5.3**.

Please note: If you are not able to select the “ASP .NET v4.0” application pool from the drop-down list on a Windows Server 2008 (R2) installation, make sure to check the software requirements section (Chapter 4) of this document.



Screen 7 - Application Pool settings on Windows Server 2008 R2



Screen 8 - Application Pool settings on Windows Server 2012

2. Edit authentication method

The Lookeen Server Gateway uses the Active Directory Services (ADS) based Security Token Service (STS) for Web Application.

In that regard, make sure that only **Windows Authentication** is activated for the Lookeen Server Web Application.

Please note: If you are not able to see **Windows Authentication** in the **Authentication** tab of the Lookeen Server Web Application, you need to add this Role Service to the Web Server (IIS).



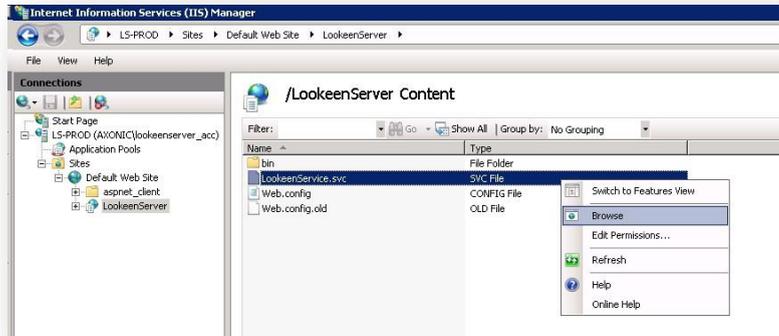
Screen 9 - Authentication Method for the Lookeen Server

3. Retrieve the LSGW URL

To retrieve the LGSW URL, select the newly created application in the IIS-Manager, switch to the content view and right click **LookeenService.svc** to browse its content.

Example of an LSGW URL:

<http://lookeen-server.yourdomain.com/LookeenServer/LookeenService.svc>.



Screen 10 – Get the LGSW URL in the LookeenServer Web Application content view

The LSGW URL will be needed to configure the Lookeen clients to use Lookeen Server (explained later on).

The content of **LookeenService.svc** should look like this (IE recommended):

LookeenService Service

You have created a service.

To test this service, you will need to create a client and use it to call the service. You can do this using the svcutil.exe tool from the command line with the following syntax:

```
svcutil.exe http://localhost/LookeenServer/LookeenService.svc?wsdl
```

This will generate a configuration file and a code file that contains the client class. Add the two files to your client application and use the generated client class to call the Service. For example:

C#

```
class Test
{
    static void Main()
    {
        LookeenServiceClient client = new LookeenServiceClient();

        // Use the 'client' variable to call operations on the service.

        // Always close the client.
        client.Close();
    }
}
```

Visual Basic

```
Class Test
    Shared Sub Main()
        Dim client As LookeenServiceClient = New LookeenServiceClient()
        ' Use the 'client' variable to call operations on the service.

        ' Always close the client.
        client.Close()
    End Sub
End Class
```

Screen 11 - Lookeen Server Service

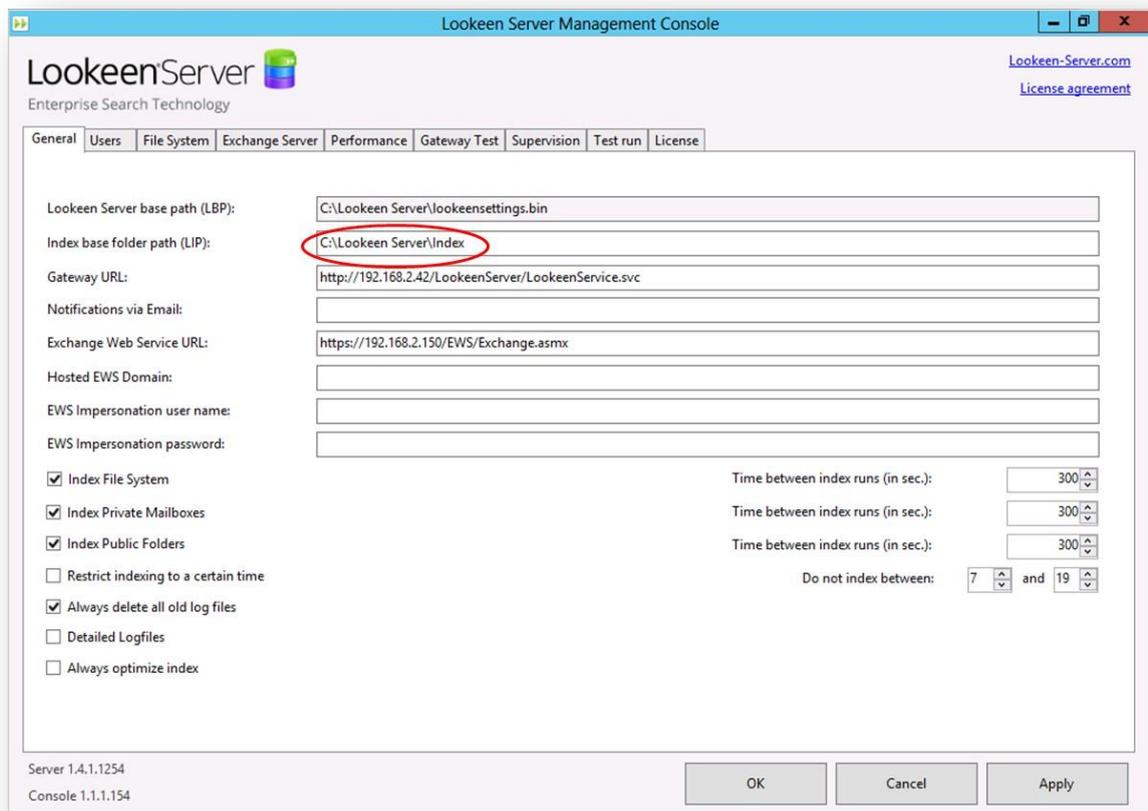
5.7. Step 7: Configuration of Lookeen Server with the Lookeen Server Management Console (LSMC)

With the Lookeen Server Management Console (LSMC) you can change all important settings related to the indexing process.

To open the LSMC, navigate to the **ManagementConsole** folder of the LBD directory and double click **LSManagementConsole.exe**.

a) Configure the Lookeen Index Path (LIP)

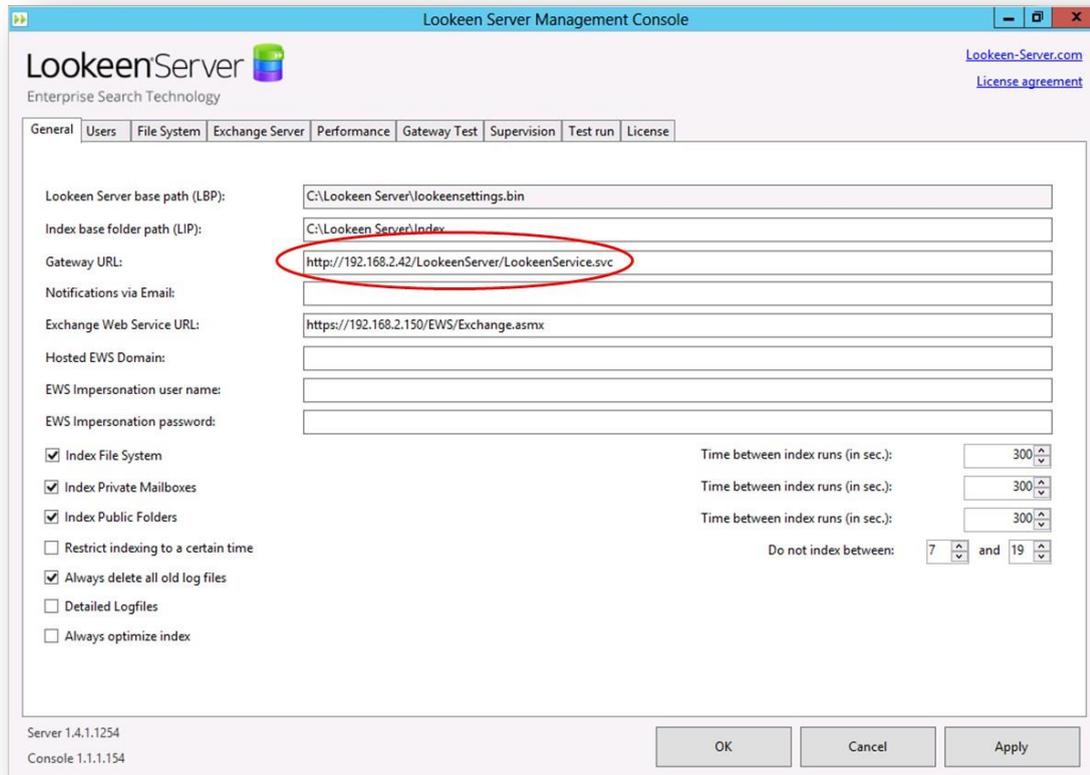
First, you need to specify the location of the Lookeen Server index. When you specify the LIP, take into consideration that depending on the volume of data that's going to be indexed, the Lookeen Server index needs enough space on the HDD.



Screen 12 - Configuring the Lookeen Index Path (LIP)

b) Configure the Lookeen Server Gateway URL

In this step you specify the Lookeen Server Gateway URL that you retrieved in Step 5.6. c.

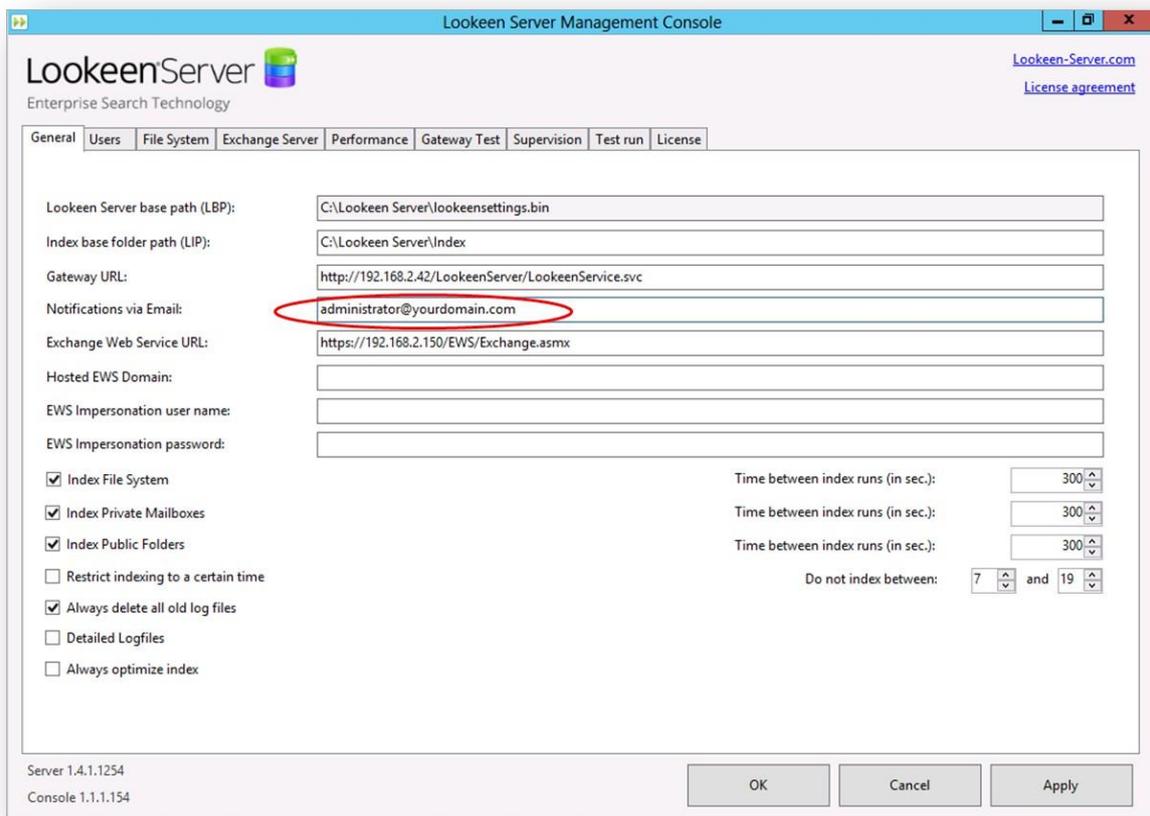


Screen 33 - Configuring Gateway URL

c) Configure notifications

The Lookeen Server administrator can configure email notifications, so that he will be notified for the following events: Start of the indexing, stop of indexing, error during indexing. Furthermore, the state of the Lookeen Server will be reported every 24 hours.

For this, enter the e-mail address of the recipient into the "Notifications via Email" field



Screen 14 - Configuring the Email notification

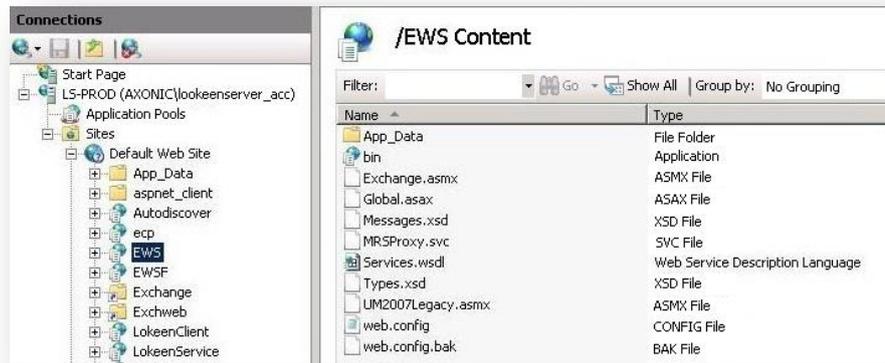
d) Configure Exchange Web Services (EWS) URL

To index Exchange Server data like Public Folders or Private Mailboxes, you need to specify the URL of your Exchange Server endpoint.

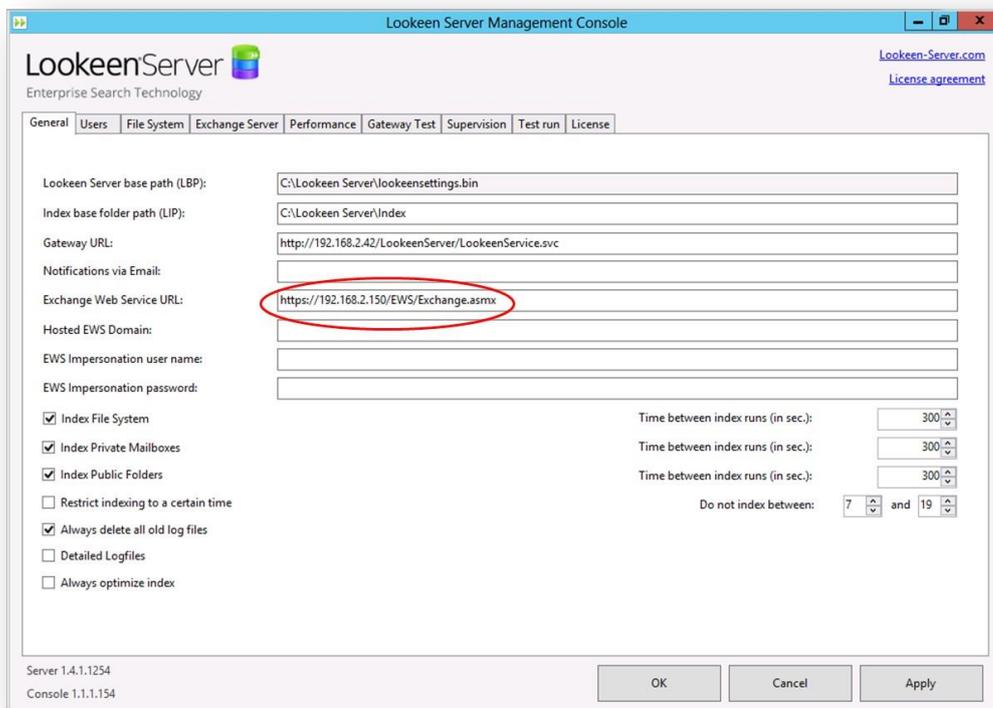
To retrieve the EWS URL, select the EWS application in the IIS-Manager of your Exchange Server, switch to the content view and right click **Exchange.asmx** to browse its content.

Example of an EWS URL:

<http://exchange-server.yourdomain.com/EWS/Exchange.asmx>.



Screen 45 – Get the EWS URL in the EWS Web Application content view

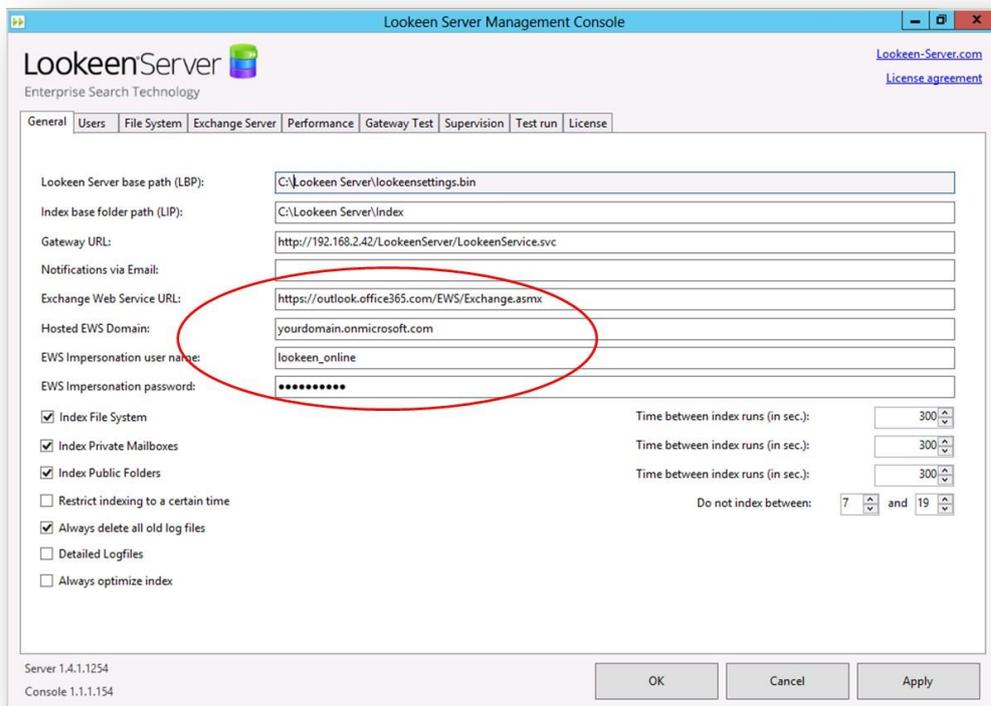


Screen 16 - Configure Exchange Web Service URL

e) Exchange Online / Exchange 365 only

If you use a Microsoft hosted Exchange Server, the EWS URL is always <https://outlook.office365.com/EWS/Exchange.asmx>

In this case, enter your hosted domain (yourdomain.onmicrosoft.com) into the “Hosted EWS Domain” field. In “EWS Impersonation user name”, enter **lookeen_online**. And in “Impersonation user name password”, enter the password which you assigned to this user.



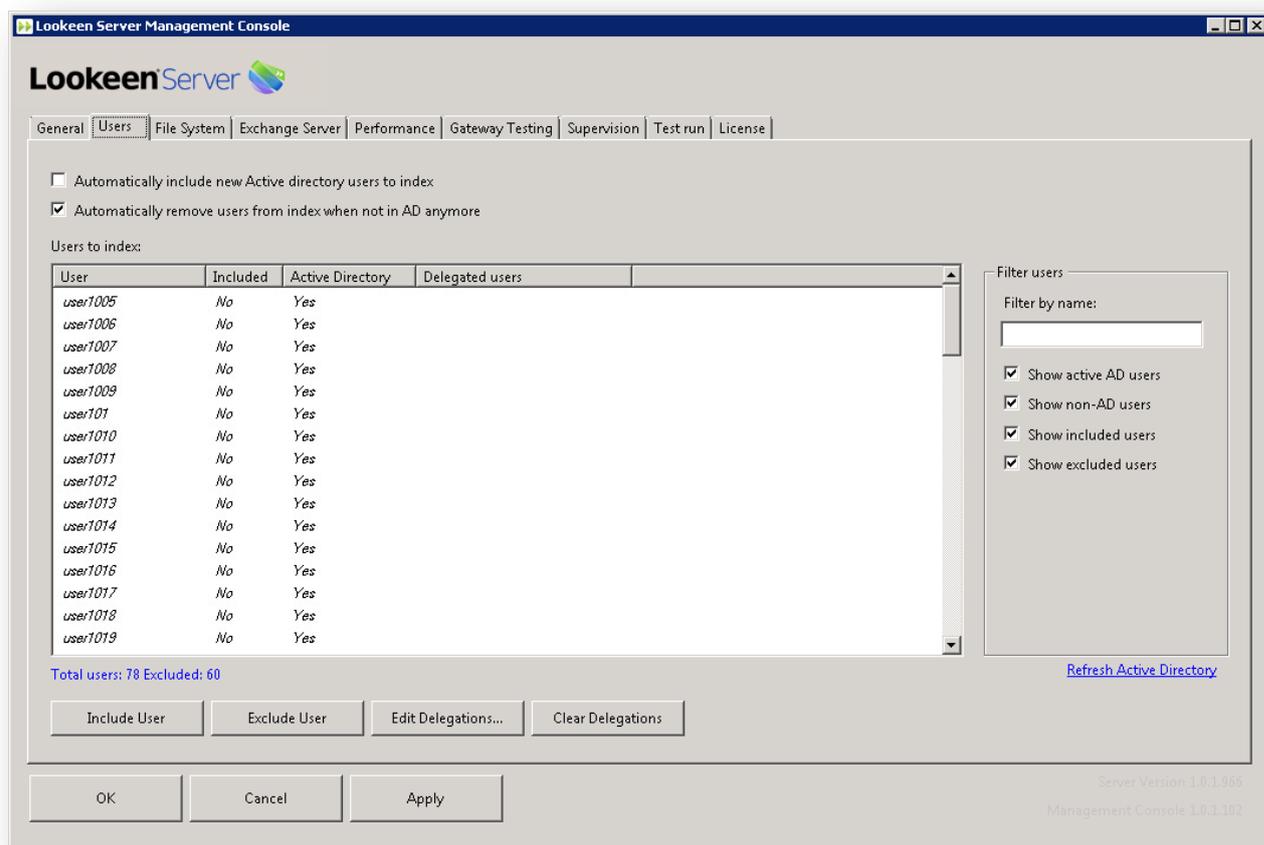
Screen 57 - Configuring the Exchange Web Service URL with Exchange 365

f) Include/Exclude Users from indexing

In order for Active Directory users to be able to utilize the Lookeen Server they must be included (activated) in the Lookeen Server. The data of all users that are excluded (deactivated) in the Lookeen Server will not be taken into account during the indexing process.

Only Active Directory users can be included for indexing with the Lookeen Server. Additionally, you can choose if you want to include or exclude user for indexing manually or automatically.

Important: Please make sure that you have included the users that are going to use the Lookeen Server prior to the start of the indexing process.
The Lookeen Server will not index the data of users that are excluded in the 'Index'

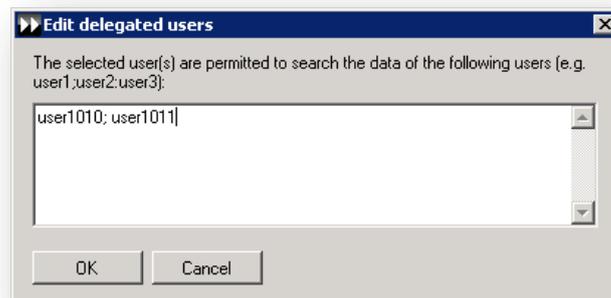


Screen 18 - Include and Exclude Users

g) Add user delegations

In Lookeen Server you are able to grant users access to the indices of other users, so that they can get search results for data that the users to which they have been granted delegation rights have within their indices. In order to grant user delegation highlight the user to which the delegation rights will be granted and click the **Edit Delegations...** button in the **Users** tab of the LSMC.

In the following dialog box, add all the users to which the highlighted user needs to have delegation rights to.



Screen 19 - Include and Exclude Users

Important: When a user is granted delegation rights to another user's index, the user can search for every item (public folder, private mailbox and file system) in the index.

In order to open the search results that are displayed via delegation, the user must have the corresponding rights in Exchange Server (for public folder- und private mailbox items) or in the file system (for files system items). Otherwise the user will not be able to the items.

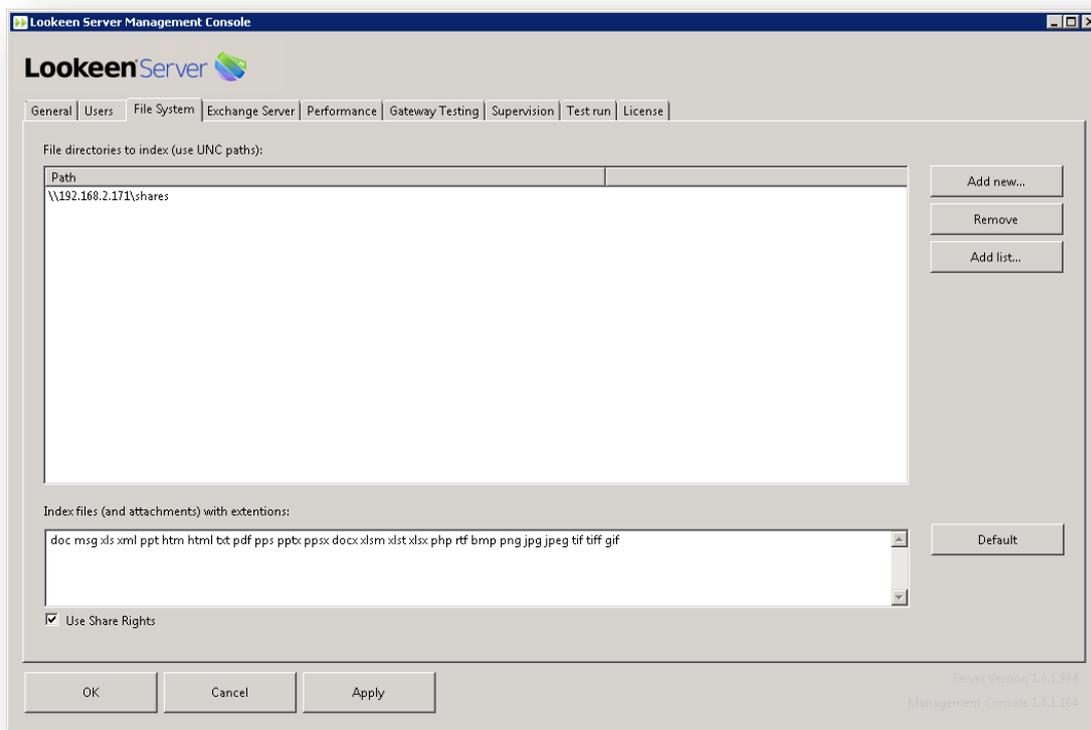
h) Add file system resources to your Lookeen Server Index

To index files located within the corporate network you must add the UNC paths in the **File System** tab. There you can also specify the file extensions that you want Lookeen Server to consider during indexing. The file extensions defined there are also valid when it comes to indexing email attachments. The LIU account (lookeenserver_acc) needs at least **Read** NTFS and Share permissions to all UNC paths that will be indexed by Lookeen Server.

If you want to add multiple network file resources at once you can create a TXT file that contains the UNC paths to the resources you want to add, one per column. Click the **Add list...** button to import the TXT file into Lookeen Server.

In addition to that you must verify that all users that need to search for files within a certain file share have the corresponding NTFS and Share permissions on the specific file share. Otherwise they will not get any results when searching for files from this specific resource. Furthermore keep in mind that users will only get search results from within a subfolder of a directory if they also have Share rights on its parent directory.

Important: Verify that you have specified extensions below. Otherwise no files and/or attachments will be indexed.



Screen 5 - Add local files to your Lookeen Server Index

Important: If you use NTFS permissions to control which users or groups can access the data in the files shares you want to index with the Lookeen Server you must uncheck the *Use Share Rights* option in the *File System* tab.

i) Exclude folders from index (optional)

In the LSMC in the *Exchange Server* tab you can exclude public folder or private mailbox folders from indexing completely. You must use a semicolon between each entry. These blacklisted folders will be skipped by the indexing process.

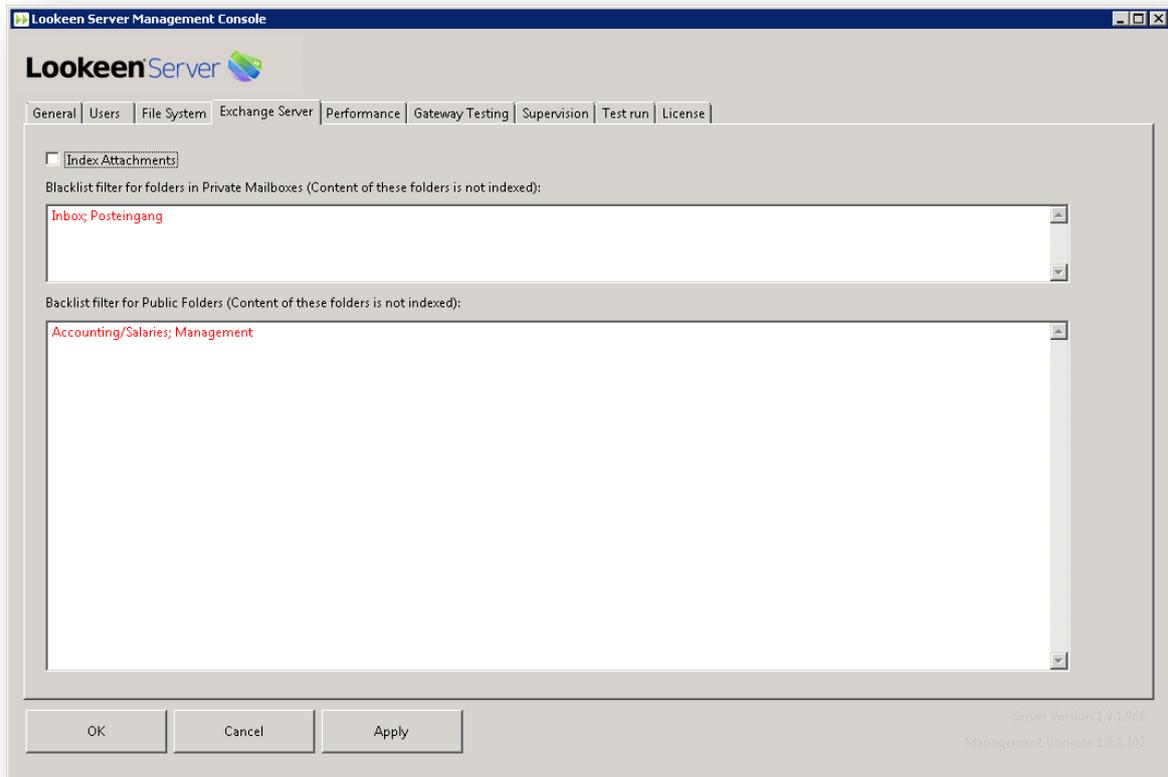
Example (for public folders): public folder 1; parent public folder/child public

Example (for private mailbox folders): Inbox; Sent Items;

Important: In case you run a German language infrastructure make sure that you mention every private mailbox folder you want to blacklist in German as well as in English (e.g.: Inbox; Posteingang).

j) Disable attachment indexing (optional)

In the LSMC, in the **Exchange Server** tab, you can disable attachment indexing completely by unchecking the corresponding option.

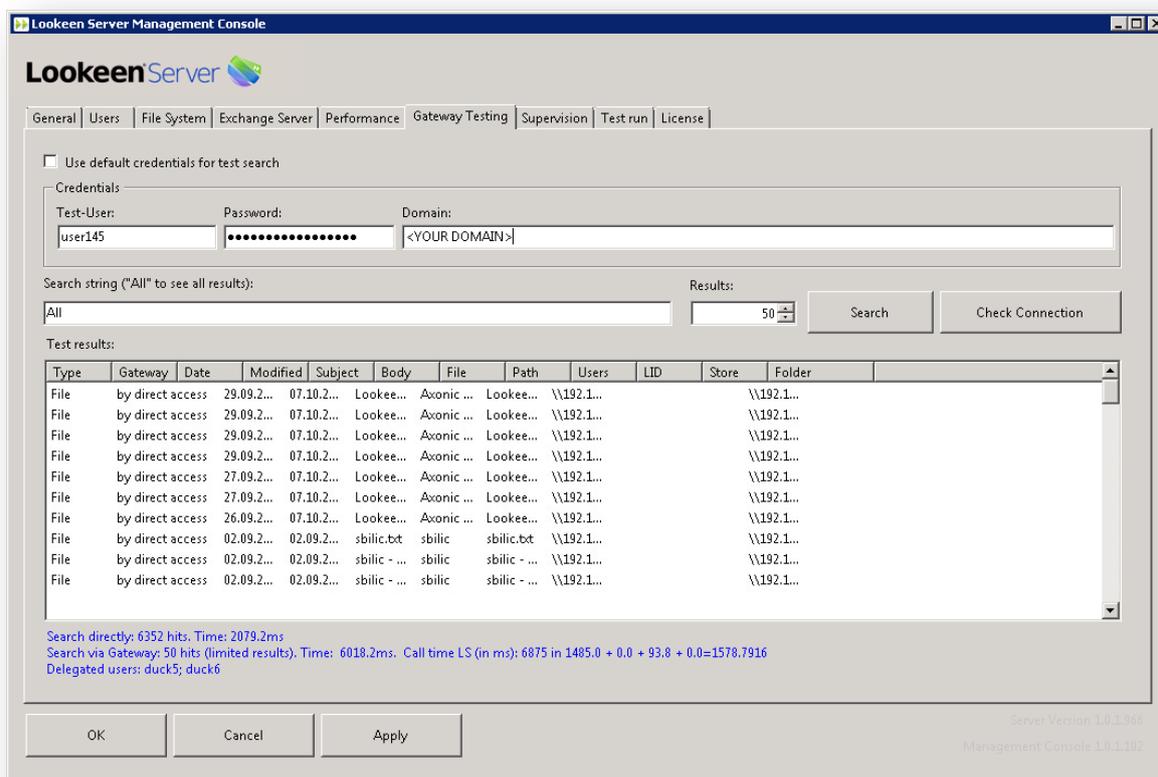


Screen 21 - Disable attachment indexing (optional)

k) Test the LSGW and your Index

In **Gateway Testing** tab of the LSMC you can test the functionality of your Lookeen Server infrastructure. After supplying the user credentials of the user with which you want to run test, you can execute search queries as different Lookeen client users.

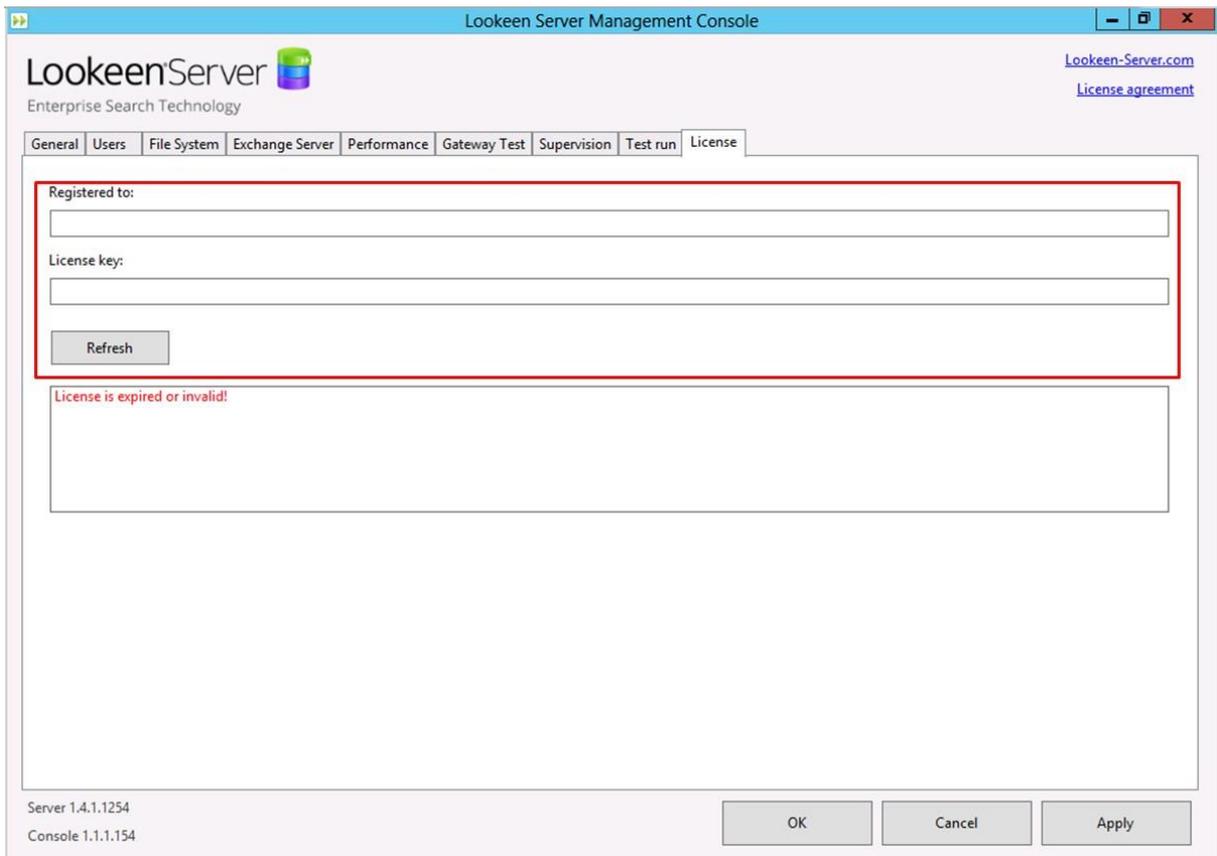
The gateway testing algorithm will test the index directly, to make sure the index is available and intact (the search results that are generated by directly querying the index are recognizable as **by direct access** in the gateway column.) as well as through the LSGW itself to make sure that the gateway is correctly configured and reachable (the search results that are generated by directly querying the index are recognizable as **via gateway** in the gateway column.). Because of that, you will get duplicates for each search result: One item direct from the index and one item through the gateway.



Screen 22 - Gateway Testing

I) How to register your Lookeen Server

To register your Lookeen Server type in your license information in the “Registered to” and “License key” fields. Once done, please click “Refresh” to update the license information and register the Lookeen Server properly.



The screenshot shows the 'License' tab in the Lookeen Server Management Console. The interface includes a navigation menu with tabs for General, Users, File System, Exchange Server, Performance, Gateway Test, Supervision, Test run, and License. The License tab is active, displaying two input fields: 'Registered to:' and 'License key:'. A 'Refresh' button is positioned below these fields. A red error message, 'License is expired or invalid!', is visible below the input fields. The console footer displays 'Server 1.4.1.1254' and 'Console 1.1.1.154'. At the bottom right, there are 'OK', 'Cancel', and 'Apply' buttons.

Screen 23 – Registering Lookeen Server

5.8. Step 8: Add multiple indices for the Lookeen Server

In order for the Lookeen Server to use multiple indices for search queries (e.g. in a scenario where the data of a branch office is indexed by a separate Lookeen Server) you must reference the additional indices within the gateway's web.config file which is located in the '**Gateway**' directory of the Lookeen Server installation directory.

The addition of other indices to the web.config file looks as follows:

```
<appSettings>  
<!-- is changed by LS-management application by string replacement!!!-->  
<add key="IndexPath" value="C:\Lookeen Server\Index" />  
<add key="IndexPath2" value=" C:\Lookeen Server\Index_Brach01" />  
<add key="DelegatedUsers" value="" />  
<add key="Body" value="xx" />  
</appSettings>
```

You need to add a separate line for each additional index.

5.9. Step 9: Using multiple Lookeen Servers with multiple Gateways

If you want to use multiple Lookeen Server installations in your environment where every Lookeen Server provides its own gateway for processing user search requests you can configure the Lookeen client software through GPOs to utilize multiple gateways.

6. Running the Server

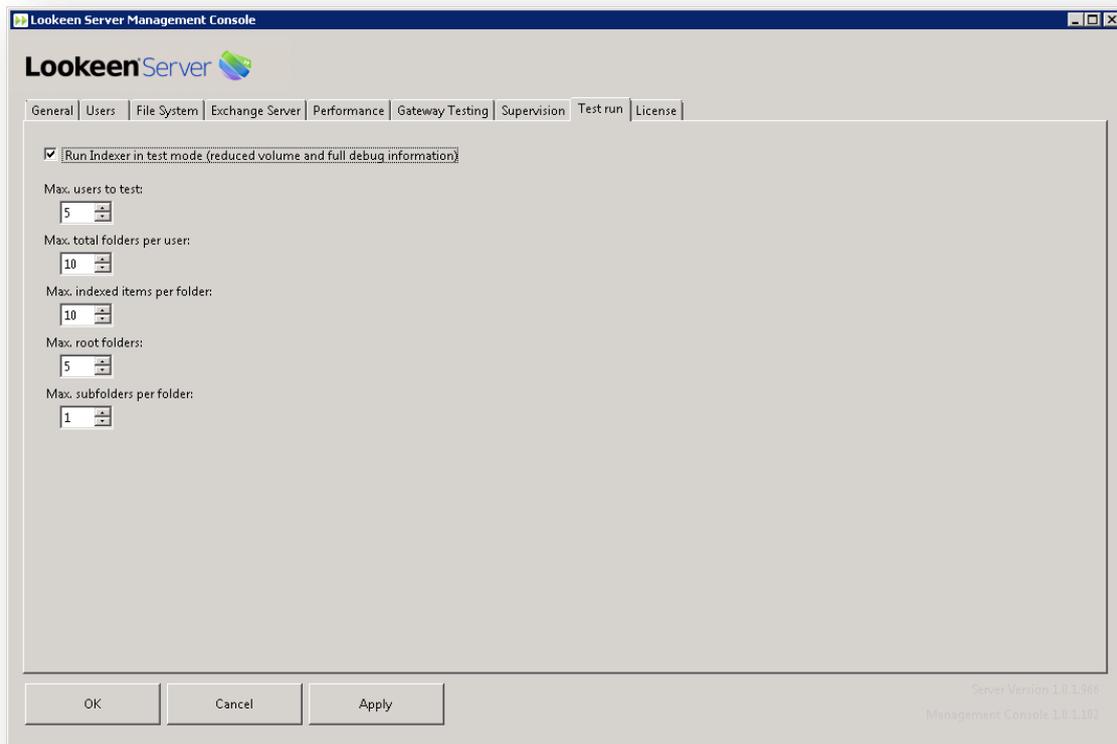
The Lookeen Server was designed to run over a long period of time while indexing a high volume of data. You might want to test the server with a reduced amount of users and a reduced amount of data before the start of the initial indexing run. For this purpose, the Lookeen Server has a test mode.

a) Test Mode

After you have installed and configured the server and added all data sources that you want to have indexed, you can start a test run. To do so, you can activate the option **Run Indexer in test mode** in the **Test run** tab of the LSMC. In this tab you can specify how many users, items, folders and subfolders should be indexed in the test run.

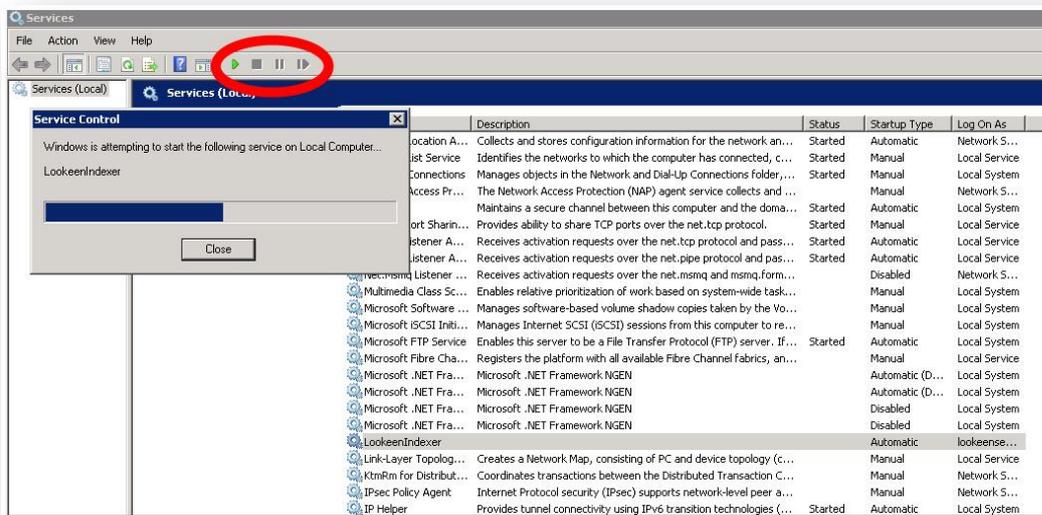
To make sure you get the maximum amount of log entries, please check the option **Detailed Logfiles** in the **General** tab of the LSMC.

Important: You must uncheck the option after the conclusion of the test run. Otherwise the Lookeen Server log files can grow to the size of several GB.



Screen 24 - Running the Server in test mode

Now you can start the Lookeen Server indexing service in the Windows service panel.



Screen 65 - Starting the indexing service

Please go back to chapter 5.7.h to test the settings in the LSMC. If everything is configured correctly, the number of indexed items should be constantly increasing. If you get no result or an error in the LSMC, please read the FAQs for a list of the most common errors.

7. Production Mode

After you have successfully tested the server you can uncheck the **Run Indexer in test mode** in the **Test run** tab of the LSMC to run the server in full production mode.

Important: Before you start running the server in production mode, uncheck the option **Detailed Logfiles** in the **General** tab of the LSMC. Otherwise the Lookeen Server log files can grow to the size of several GB.

Make sure that the Lookeen Server Indexing Service (LIS) is set to startup type **Automatic** to prevent the index from getting out of date after system restarts.

If you have no index yet, the Lookeen Server starts the initial indexing run. The Lookeen Server Indexing Service will fully index every data source during its initial run. Every next run, the indexer only indexes the data that has been changed or added since the last run, which is called *delta-indexing*. The first index run takes significantly more time than the *delta indexing* runs.

Please note: Changing the settings of the Lookeen Server in the LSMC while the LIS is running will have no effect. Changes in the LSMC will take effect after a restart of LIS. Make

sure the first index run is finished before restarting the LIS. Otherwise the index will be deleted. When the LIS is stopped, indexing is also stopped and all the changes that have been indexed during the current run will be lost. After you restart LIS, the Lookeen Server will start a new indexing run.

To clear the index entirely, please stop the index service and click the **Clear Index** button in in the **Supervision** Tab of the LSMC.

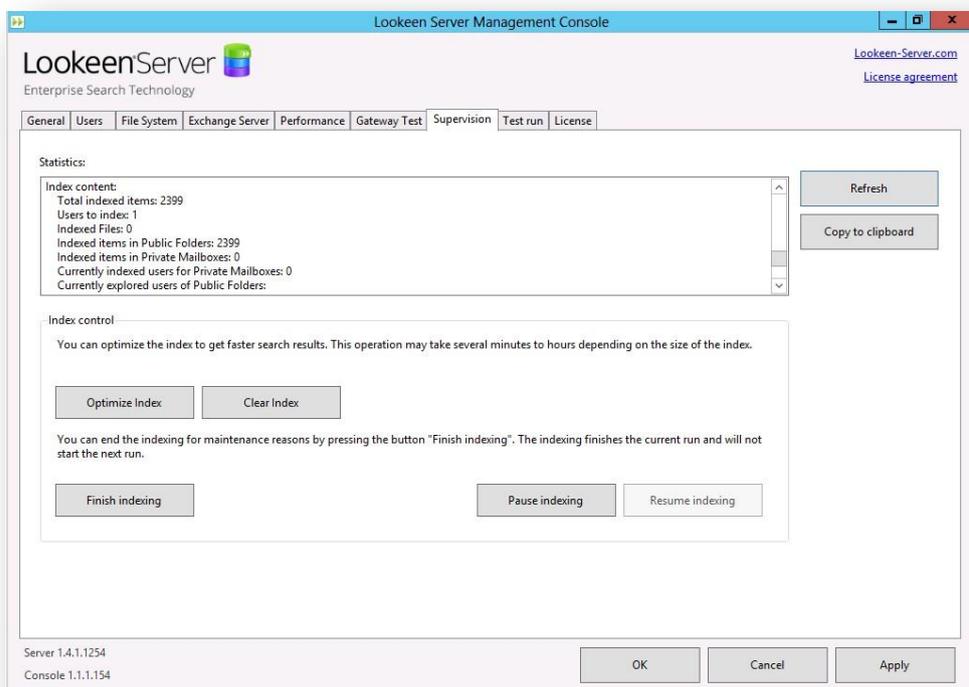
b) Supervision of the Index

You can verify the state of the indexing service at any time in the **Supervision** Tab of the LSMC. There, you also have the option to finish the running indexing service “softly” (e.g.: for planned maintenance) and also to pause the index. After the indexing process is finished, you need to restart the windows service itself to start the indexing process again. If you only pause the indexing process you can continue the indexing with the **Resume indexing** button.

Pause indexing: Pause indexing as soon as possible

Resume indexing: Restarts indexing as soon as possible

Finish indexing: Stop indexing after the current run is finished



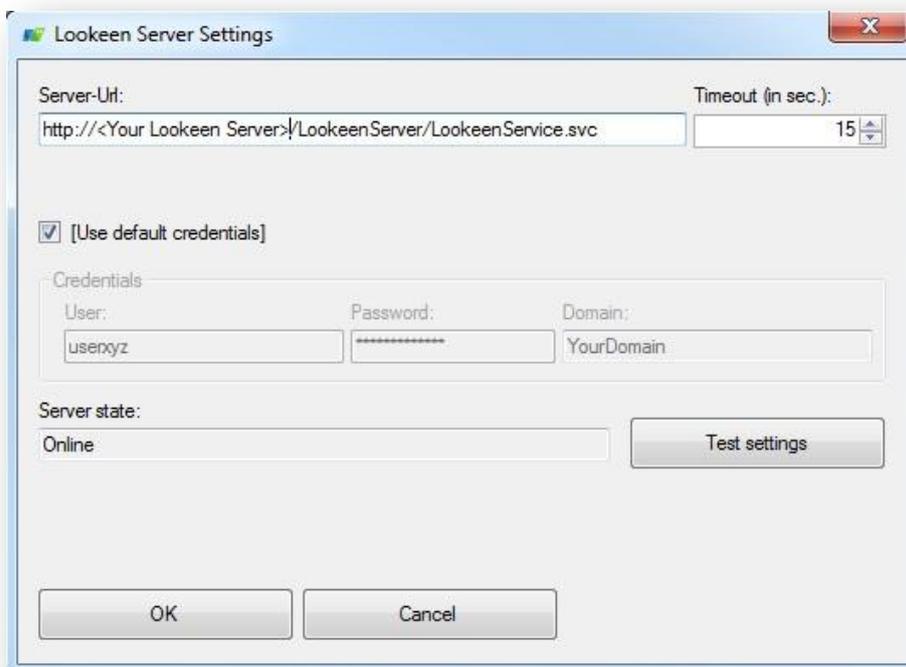
Screen 226 – Supervision

c) Connection to the Lookeen clients

You have the possibility to configure your Lookeen clients either with or without Group Policies.

8.1. Configuration of the Lookeen Client without Group Policies

1. Go to the Lookeen Options, select **Add Store** and then **Lookeen Server**.
2. Enter the LS Gateway URL in **Server-URL** textbox. See the “Setup LS Gateway” chapter for additional information.
3. (Optional) If gateway authentication is needed, manually enter user name and domain.
4. (Optional) Set timeout to abort search with the Lookeen Server if the LSGW does not respond in the specified amount of time.



Screen 27 - Lookeen client configuration

8.2. Configuration of the Lookeen Client with Group Policy

To configure your Lookeen clients without touching each computer manually, you can use group policies. There are four policies targeted towards the Lookeen Server to configure the client. For additional information, please see our [Lookeen Group Policy Guide](#).

a) Enable Server (LS1)

This key activates or deactivates the Lookeen Server buttons.

b) Set the Gateway URL (LS2)

This key specifies the Lookeen Server URL in Lookeen. If you don't know the URL, please take a look at section 4.6.c in this Document.

c) Set the Settings read only (LS3)

If you set this key, all buttons are greyed out and disabled to prevent user changes.

d) Set Server timeout (LS4)

This key defined the timeout in seconds until Lookeen cancels the search request.

Name	Type	Data
ab\ (Default)	REG_SZ	(value not set)
ab\LS1	REG_SZ	1
ab\LS2	REG_SZ	http://<yout Lookeen Server>/LookeenServer/LookeenService.svc
ab\LS3	REG_SZ	1
ab\LS4	REG_SZ	30

Screen 28 - Lookeen client configuration with Group Policy

9. Increase the Indexing Performance

In **Performance** tab of the LSMC you can adjust the overall indexing performance of your Lookeen Server according to the hardware specifications of your Lookeen Server machine. With the **Maximum System Performance** slider you can define the maximum system load that the Lookeen Server is allowed to generate before the creation of additional indexing processes is stopped.

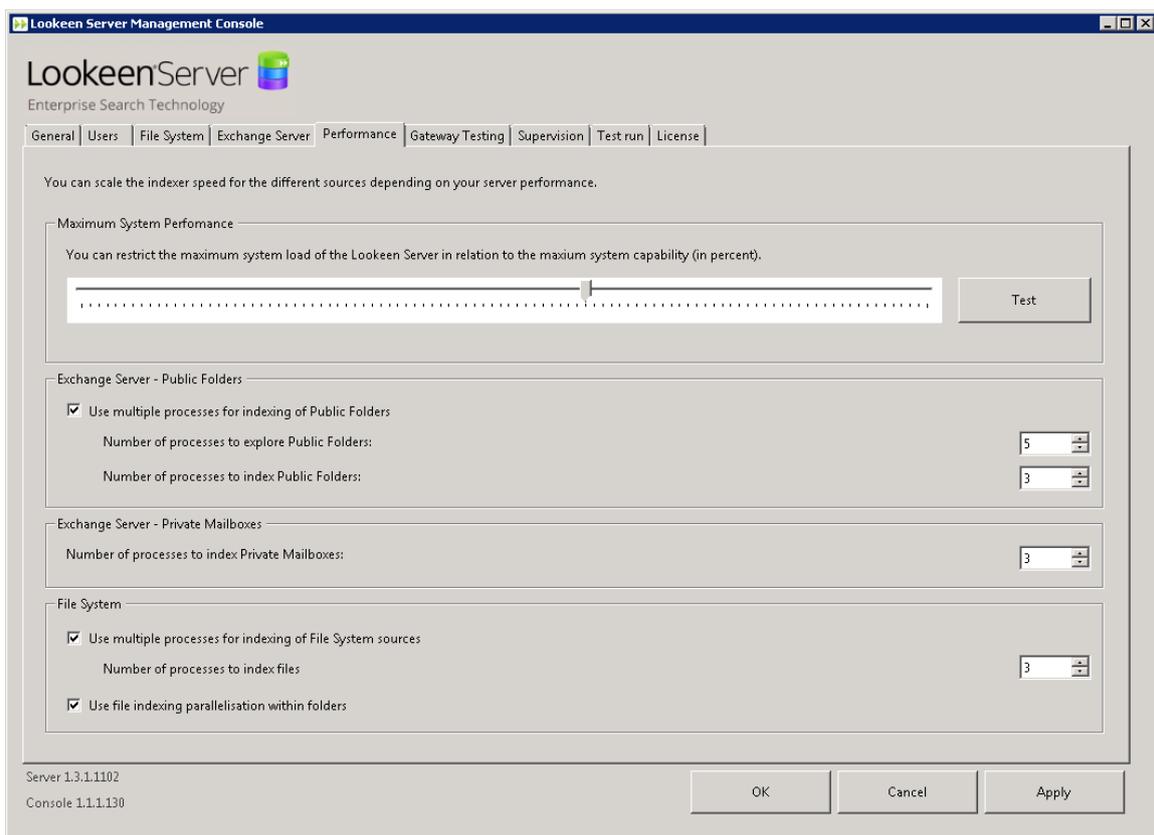
Below that, you can define if, and how many separate indexing processes will be used by the Lookeen Server when indexing the different sources (private mailboxes, public folder and file resources).

You are able to adjust those setting freely according to your needs.

In order to allow the Lookeen Server to monitor the overall system performance, please carry out the following steps on the Lookeen Server machine:

1. Open the **Computer Management** console.
2. Expand **Local Users and Groups**.
3. Select **Groups**.
4. Select the **Performance Log Users** group.
5. Add the **LIU** user account to the **Performance Log Users** group.

Important: Before you change the number of indexing instances, click the **Pause indexing** button in the **Supervision** tab (Step 7). Afterwards make sure to press the **Resume indexing** button in order for the indexing process to continue.



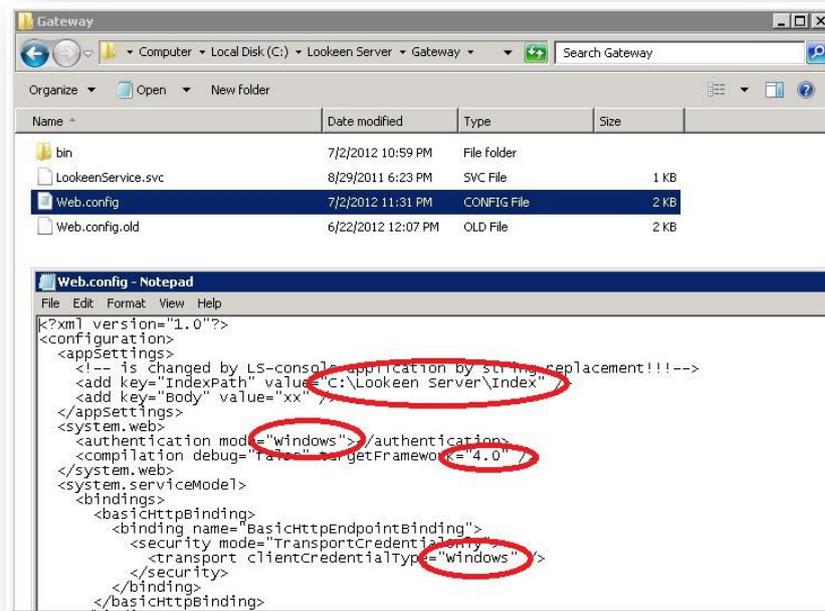
Screen 79 - Increase the Lookeen Server indexing Performance

Important: Although an increase in indexing instances can result in faster indexing, the implications concerning the increased workload of the CPU and Exchange Web Services (EWS) need to be taken in to account.

If those two workloads become too heavy, an increase in indexing instances can be counterproductive.

10. FAQs

1. **Are the indices of blacklisted users automatically deleted, when they weren't originally blacklisted?**
 - Yes, they are deleted in the next indexing run.
2. **The Lookeen Server is online but my search result is always empty.**
 - Verify the gateway path in your LSMC.
 - Verify that the *IndexPath* value in the *web.config* file that is located in the *Gateway* directory is correctly configured.
3. **I would like to move my index to another drive, what do I have to do?**
 - Stop the Lookeen Server indexing service and copy the index folder to the new location. Reset the gateway path in the LSMC to make sure the gateway application is aware of the new location of the index. Then, restart the indexing service.
4. **I get the following error message in the LSMC: "Server not ready: Client found file type 'text/html; charset=utf-8', expected 'text/xml'."**
 - Please check the *web.config* file that is located in the *Gateway* directory. Compare the red circled areas with your desired configuration. Ensure that *authentication mode* is *Windows* and the *targetFramework* is **4.0**. Also verify if the *IndexPath* value is configured correctly.



Screen 30 - web.config settings

5. I get the following error message in the LSMC: “Server not ready: The request failed with HTTP-Status 401: Unauthorized.”

- Ensure that **Windows authentication** is enabled within the IIS web application that harbors the LSGW.

6. I can't find the ASP.Net v4.0 App Pool.

- You have probably installed .NET Framework 4.0 before the IIS role was available on the server.

To re-register ASP.NET v4.0 in your IIS, open a windows command prompt and change directories to the .NET Framework folder and type the following command:
`C:\Windows\Microsoft.NET\Framework64\v4.0.30319\aspnet_regiis -ir`

7. The Lookeen Server index is not up to date.

- Please verify that the status of the Lookeen Server indexing service in the Windows service panel is **Started**. If necessary, please start the Lookeen Server indexing service.

8. Does Exchange Server have to be installed on the same server as the Lookeen Server?

- It is possible to install the Lookeen Server on the same machine as Exchange Server. Yet, for performance aspects it is highly recommended that you install the Lookeen Server on a separate, dedicated server.

9. The Lookeen Server does not index new Exchange Server elements and there are [x7] and [x3] errors in the PMLog.txt and PFLog.txt files.

- Please carry out an IIS reset on your Exchange Server machine.

10. When I start the Lookeen management console, I get the following message:



Screen 8 - Error message

- Please log in with a domain account. With a local account the LSMC is not able to collect the AD Users.

11. I get a warning from Exchange Server regarding the throttling of Exchange Web Services (EWS)

- This can be related to the indexing process of the Lookeen Server. For more information on how to configure EWS accordingly please visit <http://msdn.microsoft.com/en-us/library/exchange/hh881884%28v=exchg.140%29.aspx>.

11. Glossary

Abbreviation		Functionality
LIS	Lookeen Server Indexer Service	A Windows service. The LIS has to be created by the administrator. Example name: LookeenIndexer0
LSMC	Lookeen Server Management Console	A Windows application used to configurate the server settings. Location: %LookeenServerRoot%/ManagementConsole/ LSManagementConsole.exe
LSGW	Lookeen Gateway	Access point URL for Lookeen clients
LF	File System	Represents the network files you want to index.
PF	Public Folders	Represents the public folders on the Exchange Server you want to index.
PM	Private Mailbox	Represents all user specific data like calendar, notes, inbox, etc.
LIU	Lookeen Indexing User	User for all indexing actions of the Lookeen Server. The LIU needs impersonalisation rights for all users who are going to be indexed.
LRD	LOOKEEN ROOT DIRECTORY	Installation folder of the Lookeen Server. All resources and files are located within this folder or on of its subfolders. Note: The index data need not to be in this folder but in a separate directory.
User Impersonation permission		Gives the caller (in this case the LIU) the ability to submit an impersonation call through the Client Access Server. This does not mean that the caller has permission to access any particular account. Permission to impersonate on a server is set on the security descriptor of the server object in Active Directory. The calling account cannot be a member of any administrator group. This permission is explicitly denied to those groups.

12. Trademarks

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