INTRAFIND

iFinder Confluence Search

Technical Documentation

Version 5.4.1

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1   Introduction

iFinder Confluence Search (1) is a Confluence plugin. It provides the integrated searchbar that enables users to search Confluence and, if licensed, also other data sources. It takes care of indexing Confluence content like spaces, pages, blog posts, comments as well as attachments including their access rights.

iFinder (2) on a separate server hardware or virtual machine provides the services and tools for indexing and searching.

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2 Prerequisites

2.1 Required knowledge

You must have deep technical knowledge in the following areas:

- Confluence administration and server configuration

- Windows or Linux Server administration and installation

2.2 Confluence

- Atlassian Confluence versions 6.0.1 to 7.10

- Administration permissions for Confluence

- Remote API access must be enabled in Confluence (**Confluence administration > Further configuration > Remote API (XML-RPC & SOAP)**)

- Default Confluence ports 8080 and 8090. If you use different ports, make sure you configure them correctly when configuring the connection between the systems

2.3 iFinder server

- Server on which you can set up iFinder services and tools (also see Hardware requirements below) with Microsoft Windows Server 2012 R2 , 2016, or 2019, or a Long Term Support edition of Linux Red Hat, SuSE, CentOS, Ubuntu.

    > Alternatively, you can also install the iFinder software on the Confluence server. This is not recommended but may be an option for a first test in your trial environment. Make sure the hardware requirements are met.

- ZIP file for iFinder server installation, available as edition for Confluence Server or Confluence Datacenter. The download link is available in the **iFinder Confluence Search** app.

- The firewall on the server needs to open the following ports for Confluence: 8080, 9605, and 9602. On Windows, the **SET_Firewall_Rules.bat** script can help you with this, see Setting up iFinder server.

- Administration user for the server

- Make sure there is enough disk space according to the following table. If less than 20% of the disk space is free, you may get performance issues:

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2.3.1 Hardware requirements for iFinder server

iFinder Confluence Search – Hardware Sizing iFinder Server

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👤 Users	📄 Documents			
	< 1. Mio	< 10. Mio*	< 20. Mio*	< 50. Mio*
< 1.000	Server**: 1 Cores: 8 RAM p. Server: 16 GB Index Disk Size: SSDs: 120 GB Additional Disk Space#: 50 GB	Server**: 1 Cores: 12 RAM p. Server: 32 GB Index Disk Size: SSDs: 400 GB Additional Disk Space#: 50 GB	Server**: 1 Cores: 16 RAM p. Server: 48 GB Index Disk Size: SSDs: 800 GB Additional Disk Space#: 50 GB	Server**: 2 Cores: 24 RAM p. Server: 64 GB Index Disk Size: SSDs: 2.000 GB Additional Disk Space#: 50 GB
< 10.000	Server**: 1 Cores: 8 RAM p. Server: 16 GB Index Disk Size: SSDs: 120 GB Additional Disk Space#: 50 GB	Server**: 1 Cores: 12 RAM p. Server: 32 GB Index Disk Size: SSDs: 400 GB Additional Disk Space#: 50 GB	Server**: 1 Cores: 16 RAM p. Server: 64 GB Index Disk Size: SSDs: 800 GB Additional Disk Space#: 50 GB	Server**: 2 Cores: 24 RAM p. Server: 128 GB Index Disk Size: SSDs: 2.000 GB Additional Disk Space#: 50 GB
< 20.000	Server**: 1 Cores: 12 RAM p. Server: 24 GB Index Disk Size: SSDs: 120 GB Additional Disk Space#: 50 GB	Server**: 1 Cores: 16 RAM p. Server: 48 GB Index Disk Size: SSDs: 400 GB Additional Disk Space#: 50 GB	Server**: 1 Cores: 16 RAM p. Server: 64 GB Index Disk Size: SSDs: 800 GB Additional Disk Space#: 50 GB	Server**: 2 Cores: 24 RAM p. Server: 192 GB Index Disk Size: SSDs: 2.000 GB Additional Disk Space#: 50 GB
< 50.000	Server**: 1 Cores: 16 RAM p. Server: 32 GB Index Disk Size: SSDs: 120 GB Additional Disk Space#: 50 GB	Server**: 1 Cores: 16 RAM p. Server: 48 GB Index Disk Size: SSDs: 400 GB Additional Disk Space#: 50 GB	Server**: 1 Cores: 24 RAM p. Server: 128 GB Index Disk Size: SSDs: 800 GB Additional Disk Space#: 50 GB	Server**: 2 Cores: 32 RAM p. Server: 254 GB Index Disk Size: SSDs: 2.000 GB Additional Disk Space#: 50 GB

** iFinder Server is available for: – OS Windows Server: 2012 R2, 2016, 2019
– OS Linux Server (LongTerm Support): Rad Hat, SUSE, CentOS, Ubuntu

✉ For more users, more documents or extended technical requirements, please contact us: **atlassian@intrafind.com**

* iFinder Server license key is limited to 1 Million documents (sites, attachtments, …). Please contact us for a new free license key if you require more documents: atlassian@intrafind.com
# Additional Disk Space for iFinder Program Files and Logfiles

2.3.2 iFinder license

- The iFinder server includes a trial license key.

- This trial license key is valid for 100 days. You will get a new valid key after puchasing **iFinder Confluence Search** in the Atlassian Marketplace.

- The license key for iFinder server is limited to one million index documents (for example sites, attachments). If you plan to index more documents, contact us for a new free license at atlassian@intrafind.com.

- You can retrieve the number of Confluence objects at: **Administration > System Information > Confluence Usage**. The sum of the following numbers is relevant: **Total spaces**, **Content (Current Versions)**

	Confluence Usage
Total Spaces	21
Site Spaces	12
Personal Spaces	9
Content (All Versions)	81171
Content (Current Versions)	3408
Local Users	141
Local Groups	226

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2.4 Network and ports

Make sure that the connection between your Confluence system and the iFinder server works.

- Reverse proxy: If you use a reverse proxy, add the iFinder server to the whitelist. iFinder connects to the Confluence server in several ways, for example like a user with a browser in order to create screenshots.

- If you use SSL for your Confluence server additional ports must be opened.

2.4.1 Default ports

INTRAFIND
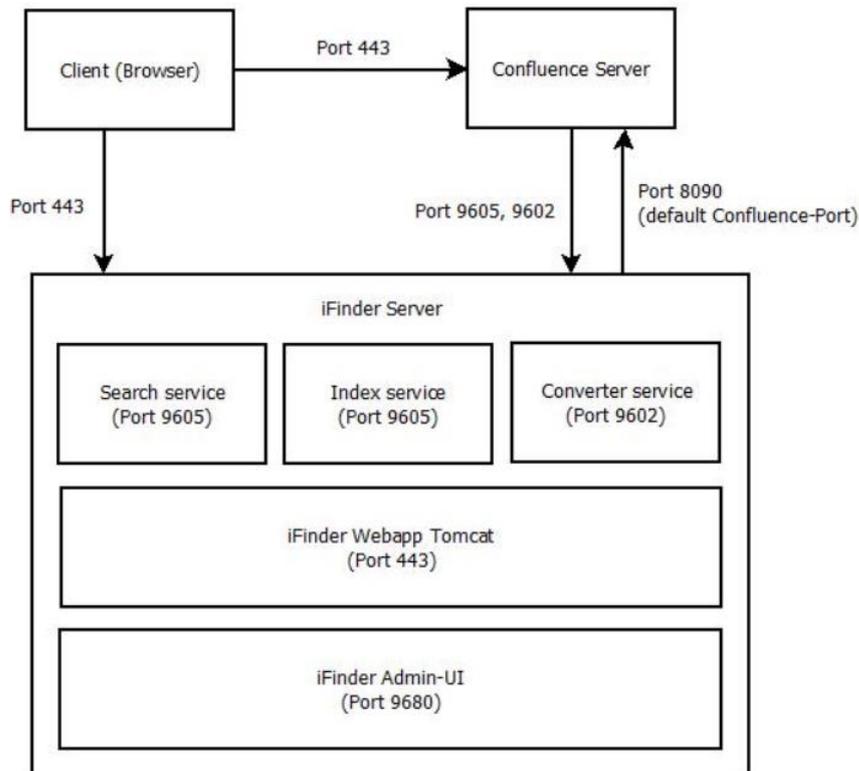
2.4.2 Ports with reverse proxy

INTRAFIND
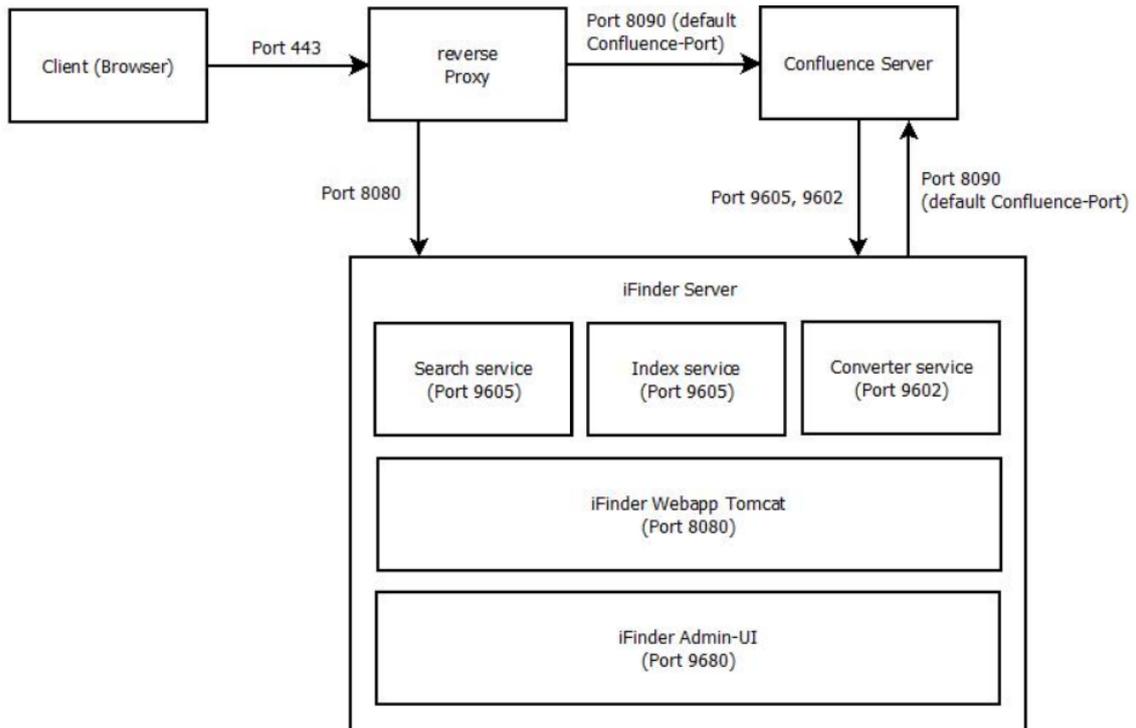
3   Installing iFinder Confluence Search

3.1   Installing the app in Confluence

1. In Confluence, open **Confluence Administration > Manage apps > Find new apps > Search in Marketplace**.

2. Search for *iFinder Confluence Search*, install it and license it (trial or purchase).

3.2   Downloading iFinder server software

1. In Confluence, navigate to **Administration > Manage Apps > iFinder Confluence Search > Configure**.

2. Under **Download iFinder**, click the link to download the iFinder software.

3. After registration, select if you want to download the Windows or the Linux edition.

4. You will receive a link for downloading the iFinder software.

5. Come back to this configuration after the iFinder server is set up, see Getting started with iFinder Confluence Search.

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4 Setting up iFinder server

The iFinder services and tools provide the index and the functionality for making Confluence contents searchable. The BAT files (Windows) and SH files (Linux) for installation are available in the installation directory.

- Windows: Make sure that the ports 9605, 9602, and 8080 are open in the firewall of the iFinder server! If not, open them. You can use the script **SET_Firewall_Rules.bat** to open them. Alternatively, you can open them manually.

- Linux: Make sure that the firewall ports are open. If your Linux Server is available on the internet, make sure that Ports 9200 and 9300 are closed.

4.1 Installing iFinder server on a separate server (Windows)

1. Download the ZIP file as described in Installing iFinder Confluence Search.

2. On the server, log on with a user who is in the Local Administrators group.

3. Copy the provided ZIP file and unzip it to a local folder, for example *C:\IntraFind.* **Do not install the software directly in C:/Windows**. Always create a subdirectory for the installation. Henceforth this directory is referred to as *<Installation directory>*. **The path must not contain any spaces.**

4. Start the *<Installation directory>***1_INSTALL-iFinderIFCS.bat** file as administrator: **Context menu > Start as administrator**.

5. On the server, Microsoft Visual C++ Redistributable 2013 must be installed. You can check this in **Start > Settings > Apps & Features**. If not, install it with the following download: https://www.microsoft.com/en-us/download/details.aspx?id=40784. Several versions can be installed in parallel.

4.2 Installing iFinder server on a separate server (Linux)

1. Download the ZIP file as described in Installing iFinder Confluence Search.

2. The user for installation must have **sudo** permissions.

   a. Check that you have access to python (at least version 3) in your Linux system:

   b. Create an **intrafind** user. The user should have **sudo** permissions.

   c. Log on with this user. (With the **root** user, the installation will not work.)

3. Unzip the installation file to **/home/intrafind**.

4. Make the files **restart.sh** and **fullinst54.sh** executable and start the installation with the following. All relevant folders are created automatically.

```
chmod +x restart.sh
chmod +x fullinst54.sh
sudo ./fullinst54.sh --ifcs -d /opt/intrafind
```

5. After successful installation the **iFinder Administration** link is displayed. Save and bookmark it for later usage in section **iFinder configuration**.

6. Make sure that Headless Chrome is installed on your system.

    > Alternatively, you can also use an already available Chromium installation in your system. In this case, add the path to this installation in step 9.

    a. Install the dependencies from the package repository. There are several methods to choose from:

    - Direct installation, e.g. on Ubuntu:

    ```
    wget -q -O - https://dl-
    ssl.google.com/linux/linux_signing_key.pub | sudo apt-key add -
    sudo sh -c 'echo "deb
    [arch=amd64] http://dl.google.com/linux/chrome/deb/ stable main"
    >> /etc/apt/sources.list.d/google.list'
    sudo apt update
    sudo apt install google-chrome-stable
    ```

    - Installing direct dependencies with transitive dependencies, see below.

    - Installing all transitive dependencies, see below.

    - Downloading all dependencies to one computer and installing them on another computer, see below.

    b. Detailed information about the different systems can be found under Appendix: Installing Headless Chrome

7. Download a Chrome driver which is compatible to your Headless Chrome. You can retrieve the version with **google-chrome –version**.

    a. Find out the path of the compatible version of **chromedriver_linux64.zip** at https://chromedriver.storage.googleapis.com/index.html, for example: https://chromedriver.storage.googleapis.com/87.0.4280.88/chromedriver_linux64.zip

    b. Download it as follows:

    ```
    wget
    https://chromedriver.storage.googleapis.com/<VERSION>/chromedriver_linux64.zip
    ```

    c. Unzip the file to **./services/if-sv-converter/**, for example, as follows:

    ```
    sudo unzip chromedriver_linux64.zip -d
    /opt/intrafind/services/if-sv-converter/
    ```

8. Edit the configuration file of **if-sv-converter** to add the path to the Chrome driver, for example, as follows:

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```
sudo vi /opt/intrafind/services/if-sv-converter/config.cfg
```

9. Add the paths to Headless Chrome (or your already installed Chromium installation) and to the Chrome driver. You need the binary, not the link.

```
chrome.chrome-path: <Path to the required Headless Chrome installation
as described in step 7 or an already existing Chromium version, for
example /opt/google/chrome/chrome>
chrome.chromedriver-path: <Path to the Chrome driver installed in step
8, for example chromedriver>
```

10. Save the file.

11. Restart **if-sv-converter** as follows:

```
sudo systemctl restart if-sv-converter.service
```

4.3 Installing iFinder server on the Confluence server (not recommended)

> We do not recommend to install iFinder server on the Confluence server in a production environment.

If you want install iFinder server on the Conflunce server for testing purposes, make sure that the hardware requirements are met as described here: iFinder Confluence Search: Hardware requirements.

4.4 Configuring iFinder

After the installation, **iFinder Administration** opens. If it does not open automatically, you can open it at http://my_ifinder_server:9680/resource/index.html. For Linux, you can take the link that was displayed after installation.

1. Log in with the user **ifconfluence** and the default password **iFinderSuperAdmin**. It is recommended to change the password.

2. In **Tools > Password encryption**, enter the password of a Confluence user with full administration permissions. This user is used to connect to the Confluence system.

3. Click on **Encrypt**. Copy the encrypted password to the clipboard.

4. Open **Tools > Extended configuration**.
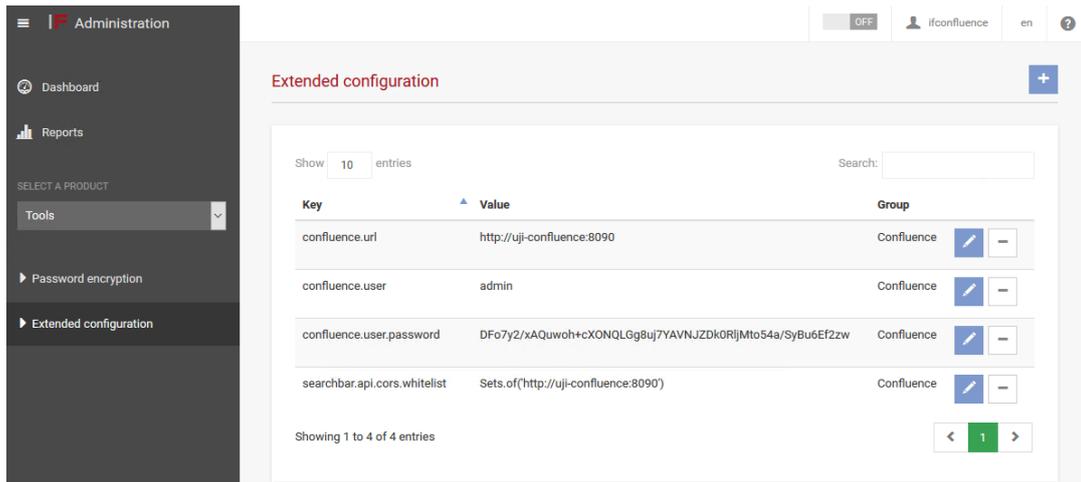
5. For the **confluence.user.password** key, click **Edit**.
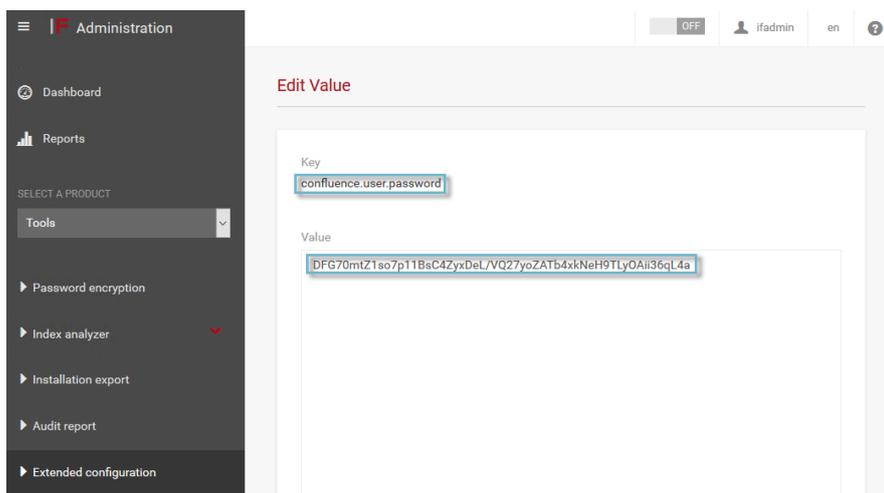
6. Paste the encrypted password from the clipboard to the **Value** field and click **Save settings**.

7. Also change the other keys and values listed the following table according to your requirements. For each key, click **Edit**, change the setting, and click **Save settings**.

Key	Value
searchbar.api.cors. whitelist	Enter the following with the value for your Confluence server here. If you add multiple values, separate them with a comma. **Sets.of('https://my-confluence-server.com:port')**
confluence.url	Enter the Confluence URL, for example https://my-confluence-server.com:port
confluence.user	Enter the Confluence administrator user name.

8. **Optional**: By default, the user sees the preview. If you want to disable the preview for Confluence content only, do the following:

> In the preview, for Confluence pages, some special contents may appear that the users usually do not see. This may, for example, be hidden elements in macros. If you want to prevent users from seeing content in the preview that they are not allowed to see, you can change the setting to **false**.

    a. For the **ifinder.confluence.preview.on** key, change the value from **true** to **false**.

    b. Click **Save settings**.

4.5 Configuring Apache Tomcat server for CORS

The iFinder software includes an Apache Tomcat server. You must configure the Apache Tomcat server in order to enable access from your Confluence server. Modify the CORS settings in the *web.xml* file of the Apache Tomcat server on which iFinder is installed.

1. Open the *iFinder@Confluence\apache-tomcat-<version>\webapps\ifinderconfluence\WEB-INF\web.xml* file with an editor.

2. Search for **allowed.origins** and add your Confluence server URL as **<param-value>**.
   Example: **https://my-confluence-server:port**
   You can also add more addresses, separated with commas. Example: **https://my-confluence-server:port1,https://my-confluence-server:port2**

```xml
<filter>
    <filter-name>CorsFilter</filter-name>
    <filter-class>org.apache.catalina.filters.CorsFilter</filter-class>
    <init-param>
        <param-name>cors.allowed.origins</param-name>
        <param-value>PROTOCOL://CONFLUENCE_SERVER:PORT</param-value>
    </init-param>
</filter>
```

3. To enable the settings:

   o Windows: Start the *<Installation directory>***2_RESTART_Tomcat.bat** file as administrator: **Context menu > Start as administrator**.

   o Linux:

   ```
   sudo systemctl restart tomcat.service
   ```

4. If Tomcat does not start, refer to the Tomcat log files available at *<Installation directory>\services\tomcat\logs*.

4.6 Configuring the Converter service

On iFinder server, configure the settings for accessing Confluence. These settings are used, when the Converter service accesses Confluence via the same URL as the user.

1. Open the **config.cfg** file in *<Installation directory>\services\if-sv-converter-1* (Windows) or */opt/intrafind/services/if-sv-converter/* (Linux) with an editor.

2. In the **urlConfigs** section, define the settings for the Confluence connection. You can use basic authentication **or** Windows authentication. If you want to use other authentication methods, e.g. SAML, contact us at atlassian@intrafind.com.

   o **regex**: Define a Java regular expression for the Confluence URL with the default port, for example **.*wiki\\.example\\.com.*** or **.*confluence:8090.***

   o **loginUsername**: Confluence administrator user name.

   o **loginPassword**: Encrypted password that you generated before, see here.

   o **authMethod**: WINDOWS or BASIC.

   o **screenshotHandlerBean**: Must be **confluence.screenshot** in order to create screenshots for the preview.

   o **domain**: (Only Windows authentication) Domain of the Confluence user defined above, for example MUC.ACME.CORP.

Configuration for BASIC authentication:

```
converter.security.mapping: {
    "urlConfigs": [{
        "regex": ".*https://wiki.example.com.*",
        "loginUsername": "my_admin",
        "loginPassword": "Encrypted_Password",
        "authMethod": "BASIC",
        "screenshotHandlerBean": "confluence.screenshot"
    }]
}
```

Configuration for WINDOWS authentication:

```
converter.security.mapping: {
    "urlConfigs": [{
        "regex": ".*https://wiki.example.com.*",
        "loginUsername": "my_admin",
        "loginPassword": "my_encrypted_Password",
        "authMethod": "WINDOWS",
        "domain": "my_domain",
        "screenshotHandlerBean": "confluence.screenshot"
    }]
}
```

3. Save the file.

4. To enable the settings:

   o Windows: Start the *<Installation directory>***3_RESTART_Converter.***bat* file as administrator: **Context menu > Start as administrator**.

   o Linux:

   ```
   sudo systemctl restart if-sv-converter.service
   ```

   If Confluence is **not** configured for HTTPS, continue with Getting started with iFinder Confluence Search.

4.7 Optional: If Confluence is configured for HTTPS

If Confluence is configured for HTTPS, also the Tomcat server of the iFinder middleware must be configured for HTTPS. For configuring SSL you have to install a signed SSL certificate on the iFinder middleware Tomcat server.

> The following gives a simplified instruction. For detailed information, see the official Tomcat documentation at https://tomcat.apache.org/tomcat-9.0-doc/ssl-howto.html.

4.7.1 Generating a key and certificate

If you already have a private signed certificate available, continue with Configuring Apache Tomcat for SSL.

1. Create a directory, where your certificate will be stored:
   <Installation directory>\cert

2. For SSL to function properly you will have to provide all the DNS Names that your server is setup with. This includes the fully qualified hostname of the machine.
   Example: If your corporate domain is **acme.corp** and your iFinder middleware is installed on server **machine101** and available under the DNS name **ifinder** your list of DNS names will include:
   machine101.acme.corp
   ifinder.acme.corp
   Also, add any additional DNS names for the machine.

3. Create a Java Keystore with the command using the list of DNS names:

   ```
   keytool -genkeypair -keyalg RSA -keysize 4096 -alias tomcat -ext
   "SAN=dns:machine101.acme.corp,dns:ifinder.acme.corp" -keystore
   <Installation directory>\cert\keystore.p12 -storetype PKCS12
   ```

4. Note down the password you used.

4.7.2 Generating a Certificate Signage Request (CSR)

The newly created certificate needs to be signed by your corporate certificate authority (CA) so that the browsers in your organisation are be able to navigate to the iFinder middleware.

1. Generate a CSR file with the following command. Again, you will need the list of DNS Names:

   ```
   keytool -certreq -file <Installation directory>\cert\ifinder.csr -keystore
   <Installation directory>\cert\keystore.p12 -alias tomcat -ext "
   SAN=dns:machine101.acme.corp,dns:ifinder.acme.corp "
   ```

2. On success the CSR file **ifinder.csr** is available in the *<Installation directory>\cert* folder.

3. Send this file to your corporate CA for signing.

4.7.3 Importing the signed certificate

1. After you have received your signed certificate from the CA place it in the *<Installation directory>\cert* folder under the name **ifinder.crt**.

2. Ask your CA for their root and intermediate certificates.

3. Place these in *<Installation directory>\cert* with the names **root.crt** and **intermediate.crt**.

4. Import the root and intermediate certificates using the following commands:

```
keytool -importcert -trustcacerts -keystore <Installation
directory>\cert\keystore.p12 -file root.crt -alias root
keytool -importcert -trustcacerts -keystore <Installation
directory>\cert\keystore.p12 -file intermediate.crt -alias intermediate
```

5. Import the certificate into your keystore using the following command:

```
keytool -importcert -trustcacerts -keystore <Installation
directory>\cert\keystore.p12 -file ifinder.crt -alias tomcat
```

6. If all went well, you have a complete keystore available under *<Installation directory>\cert\keystore.p12*.

4.7.4 Configuring Apache Tomcat for SSL

Configure the Tomcat server of iFinder for HTTPS.

1. Open the *apache-tomcat-<Version>\conf\server.xml* file.

2. Enter paths and file names of your keys and certificates. For detailed information, see https://tomcat.apache.org/tomcat-9.0-doc/ssl-howto.html#Certificate.

3. In the file this may for example look as follows:

```
<Connector
protocol="org.apache.coyote.http11.Http11NioProtocol"
port="443" maxThreads="200"
scheme="https" secure="true" SSLEnabled="true"
keystoreFile="<Installation directory>/cert/keystore.p12"
keystorePass="<yourpassword>"
clientAuth="false" sslProtocol="TLSv1.2+TLSv1.3" compression="on"/>
```

4.7.5 Importing the root certificate

If the Confluence Server is running SSL on the corporate network, it is necessary to import the Confluence server root certificate into the Java keystore. This can be found in **<IFCS Root Directory>\\jdk\\jre\\lib\\security\\cacerts**. This is necessary to enable *iFinder Search for Confluence* to view thumbnails and previews of documents. The easiest way to do this is with the **Keystore Explorer** program, which can be obtained here: https://keystore-explorer.org/

To export the root certificate:

1. Open Confluence in a browser.

2. Click on the small **Lock** icon.

3. Open the **Certificate**.
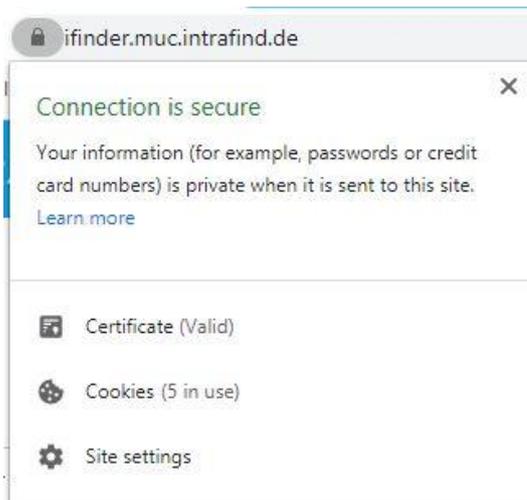
4. Open the root certificate.

5. Save the root certificate to a file.
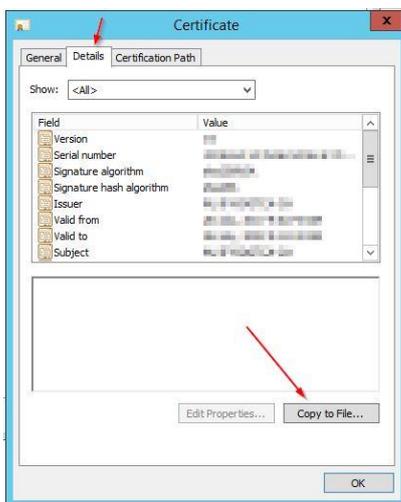
6. Repeat steps 4 and 5 with the intermediate certificate.

To import the certificates to the Java key store:

1. Open a command line in adminstrator mode.

2. Navigate to **<IFCS Root Directory>\jdk\bin**.

3. Import the root certificate:

```
keytool -importcert -keystore .. -storepass "changeit" -alias "ifcs-root"
-file <file name of the root certificate>
```

4. Confirm the question **Trust this certificate? [No]:** with **yes**.

5. Import the intermediate certificate:

```
keytool -importcert -keystore .. -storepass "changeit" -alias "ifcs-
intermediate" -file <file name of the intermediate certificate>
```

To import with the Keystore Explorer:

1. Open the file **<IFCS Root Directory>\jdk\jre\lib\security\cacerts**.

2. Enter the password **changeit**.

3. All root certificates included in the delivery are displayed.

4. **Import tools > Trusted Certificate**

5. Select the file to which you exported the Confluence root certificate.

6. Also, import the intermediate certificate.

7. Save and quit.

4.7.6   Finalizing Apache Tomcat configuration

To enable the settings:

- Windows: Start the *<Installation directory>***2_RESTART_Tomcat.bat** file as administrator: **Context menu > Start as administrator**.

- Linux:

```
sudo systemctl restart tomcat.service
```

If it starts, you have successfully configured SSL Encryption. If Tomcat does not start, refer to the Tomcat log files available at *<Installation directory>\services\tomcat\logs*.

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5   Getting started with iFinder Confluence Search

5.1   Finalizing configuration for iFinder Confluence Search

After setting up iFinder server, provide the connection settings and the group information in **iFinder Confluence Search**.

1. In Confluence, navigate to **Administration > Manage Apps > iFinder Confluence Search > Configure**.

2. Under **iFinder server base URL**, enter the URL for your iFinder server:
   http://**MY_IFINDER_SERVER:PORT**/ifinderconfluence
   The port is typically **8080**.

3. In the **Authenticated Confluence groups** field, add a comma-separated list of the groups that you want to enable to use iFinder Confluence Search.

   o Everyone who is a member of at least one group will see iFinder Confluence Search instead of the standard Confluence search.

   o You can add Confluence groups, and if your Confluence system is configured accordingly also Active Directory groups.

   o Alternatively or in addition, you can add single users. To do this, create the **ifinder_group** and add the users to it.

   o **Note**: The **ifinder_universal_plugin** group is still available but will be removed with one of the next versions. Use **ifinder_group** instead.

4. In the **Anonymous search** section, define if you want to enable anonymous users to use **iFinder Confluence Search**.

5. Define where the iFinder services are located. In the fields **Index Service**, **Search Service**, and **Converter Service**, replace the URL with the URL of your iFinder installation. For information about additional settings for indexing, see Advanced configuration for searching and indexing.

Field	Description	Example
Index service URL	URL at which the index service is accessible.	http://**my_ifinder_server**:9605/ hessian/index
Search service URL	URL at which search service is accessible.	http://**my_ifinder_server**:9605/ hessian/search
Converter service URL	URL at which converter service is accessible.	http://**my_ifinder_server**:9602/ hessian/converter

6. Click on **Check connection** to perform a connection test. You can only start indexing after a successful connection test.

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5.2 Starting initial indexing

After the **iFinder Confluence Search** app is configured and you have performed a successful connection test you can index the Confluence contents.

> If you want to start indexing in Confluence independent of a connection to iFinder, you can disable the iFinder Confluence Search temporarily with **Manage apps > iFinder Confluence Search > Deactivate**.

If more than one million index objects are counted during indexing, you need a different license key. Contact atlassian@intrafind.com to request the free license key.

Warning: Initial indexing or re-indexing of the complete content can significantly affect the performance of your instance; for larger instances, the process can take hours.

1. In Confluence, navigate to **Administration > Content Indexing > Search Index**.

2. Click on **Create New**.

3. All selected content types are crawled and indexed into the iFinder fulltext index.

> After the first indexing, check that there is enough disk capacity on the iFinder server. If there is less than 20% free disk space, the system will not work anymore and indexing of new content cannot be performed. Also add the logfiles to your monitoring routines.

5.3 Searching Confluence with iFinder

After successful configuration you can see the new search option in Confluence:

> If you do not see **iFinder search** in the search field, you are not in a group that is allowed to use with iFinder Search for Confluence. Instead, you are searching with the default Confluence search.

To search with **iFinder Confluence Search**:

1. Click on the **iFinder search** field.

2. Enter a search term. For a quick overview of the documents, for which you have read permissions, you can enter an asterisk ***** instead of a search term.

3. Start searching with the **Enter** key or click on 🔍.

4. For detailed information, see the online help. To open it, click on ⑦ in the header bar.

6   Checklists and troubleshooting

- Checklists
- Troubleshooting
    - Confluence search instead of iFinder Confluence Search
    - Empty search page
    - Broken images, no preview function, missing content

6.1   Checklists

While installing and configuring, use the following checklist in order to make sure that you do not miss any important points.

Checking prerequisites	System	More information
Are the requirements for Confluence (version, permissions) met?	Confluence	iFinder Confluence Search
Is the app license key sufficient?	Confluence	iFinder Confluence Search
Are the hardware requirements for iFinder server met?	Server for iFinder server	iFinder Confluence Search
Are the software requirements for iFinder server met?	Server for iFinder server	iFinder Confluence Search

Installing the app	System	More information
iFinder Confluence Search is installed and licensed	Confluence	Installing iFinder Confluence Search
Is the access for users defined with **ifinder_group** or by adding groups?	Confluence	Getting started with iFinder Confluence Search
Is the app configured with the correct base URL of iFinder server?	Confluence	Getting started with iFinder Confluence Search

Setting up iFinder server	System	More information
Have you downloaded the iFinder software for installation?	iFinder server	Installing iFinder Confluence Search
Is the ZIP file installed?	iFinder server	Setting up iFinder server
Is iFinder server configured (password encryption, extended configuration)?	iFinder server - Administration	Setting up iFinder server

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Setting up iFinder server	System	More information
Is **Apache Tomcat** on iFinder server configured for CORS and restarted?	iFinder server - Apache Tomcat	Setting up iFinder server
If Confluence is configured for SSL: Is **Apache Tomcat** configured accordingly with signed certificates?	iFinder server - Apache Tomcat	Setting up iFinder server
Is the **Converter service** configured and restarted?	iFinder server	Setting up iFinder server

Finalizing configuration in Confluence	System	More information
Are the URL of iFinder and the services defined in Confluence in the **iFinder Confluence Search** configuration?	Confluence	Getting started with iFinder Confluence Search
Has initial indexing been started?	Confluence	Getting started with iFinder Confluence Search
Can Confluence be searched with iFinder?	Confluence	Getting started with iFinder Confluence Search

6.2   Troubleshooting

We are happy to help. If you have problems with the configuration, please contact us at atlassian@intrafind.com. Ideally with a short error description and a date proposal. We support from Germany, Munich in the time zone UTC +1.

First, try a reboot of iFinder server:

1. Log on to your iFinder server as a user with administration access.

2. Restart iFinder server:

   o   Windows: Start the **<Installation directory>\RESTART.bat** file as administrator: **Context menu > Start as administrator**.

   o   Linux: Start the **<Installation directory>\RESTART.bat** script:

   ```
   sudo restart.sh
   ```

6.2.1   Error with status 503 code

Status 503 occurs in **atlassian-confluence.log.**

Possible reasons: Confluence server may be configured to communicate via a proxy.

Solution: Check if the Confluence server accesses the iFinder services via a proxy. If yes, configure the proxy in a way that communication with the iFinder services is possible by whitelisting the iFinder URL.

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6.2.2 Confluence search instead of iFinder Confluence Search

Some Confluence users do not see iFinder Confluence Search but only the default Confluence search in the header bar.

Possible reasons: The users are either not logged on or do not have the permission to access iFinder Confluence Search.

Solution: Add the user to a group that has access to iFinder Confluence Search (**ifinder_group** or any defined group with access). Delete the browser cache manually. Instruct the users to log on to Confluence again.

6.2.3 Empty search page

Possible reasons: Communication between Confluence and iFinder does not work correctly.

Solution: Make sure that all references to Confluence are configured with the correct ports that Confluence uses for communication.

6.2.4 Broken images, no preview function, missing content

Possible reasons: Converter service not configured correctly, for example, the authentication method or the encrypted password. Alternatively, Microsoft Visual C++ Redistributable 2013 might not be installed correctly.

Solution: Make sure that the Converter service is configured correctly as described in Setting up iFinder server: Configuring the Converter service. Also, make sure that Microsoft Visual C++ Redistributable 2013 is installed as described in Setting up iFinder server.

7 Advanced configuration for search integration

- Customizing the layout for iFinder Confluence Search in Confluence

- Enabling user authentication with users from an LDAP directory

- Enabling encryption with private and public keys

7.1 Customizing the layout for iFinder Confluence Search in Confluence

You can adapt the styling directly in Confluence:

1. Open the configuration in Confluence **Administration > Look and Feel > Stylesheet**. Add your own CSS file which will overwrite the searchbar CSS file.

2. For this, the search page has the selector **ifs-main**. You can use this selector to use the styling only for this page. This can for example be relevant if you want to use the styling only for some areas or if the layout is not correct due to Confluence themes and you have to style Confluence elements on this page. Replace the placeholders with your values.

```css
.ifs-main a,
.ifs-main a:visited,
.ifs-main a:focus,
.ifs-main a:hover,
.ifs-main a:active {
    color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .ifs-searchareas {
    background-color: REPLACE_WITH_YOUR_MAIN_COLOR;
}

.ifs-main .ifs-searchareas>.ifs-searchareas-wrapper .ifs-tab-link {
    color: white !important;
}

.ifs-main .ifs-searchareas>.ifs-searchareas-wrapper .ifs-tab-link.active,
.ifs-main .ifs-searchareas>.ifs-searchareas-wrapper .ifs-tab-link:hover {
    background-color: TAB_LINK_COLOR !important;
    color: white !important;
}

.ifs-main .ifs-searchareas>.ifs-searchareas-wrapper>.ifs-tabs>.ifs-move-tabs {
    background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .typeahead__searchfield,
.ifs-main .ifs-sb .typeahead__container .ifs-button.ifs-extended-search-button,
.ifs-main .ifs-sb .ifs-extended-search,
.ifs-main .ifs-sb .ifs-searchbar-info {
    border-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .ifs-sb .ifs-sdrop-header {
    background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .ifs-rl .ifs-hitlist .ifs-media .match {
```

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```css
        background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .ifs-globalnews .ifs-news-header {
        background-color: REPLACE_WITH_YOUR_LIGHT_COLOR !important;
}

.ifs-main .ifs-globalnews .ifs-news-btn {
        color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .ifs-globalnews .ifs-news-btn:hover {
        background-color: GLOBAL_NEWS_BUTTON_HOVER_COLOR !important;
}

.ifs-main .ifs-globalnews .ifs-news-title {
        color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .ifs-rl .ifs-hitlist .ifs-media>.ifs-media-left.ifs-preview-
available>a>.ifs-media-left-preview {
        background-color: REPLACE_WITH_YOUR_LIGHT_COLOR !important;
}

.ifs-main .ifs-rl .ifs-hitlist .ifs-media>.ifs-media-left.ifs-preview-
available>a>.ifs-media-left-preview-hover {
        background-color: REPLACE_WITH_YOUR_MAIN_COLOR54 !important;
}

.ifmodal-overlay .ifs-spinner>div,
.ifmodal-wrapper .ifs-spinner>div,
.ifs-main .ifs-rl .ifs-spinner>div,
.ifs-main .ifs-sb .ifs-spinner>div,
.ifs-main .ifs-searchareas .ifs-spinner>div {
        background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifmodal-overlay .ifs-page-seperator,
.ifmodal-wrapper .ifs-page-seperator,
.ifs-main .ifs-rl .ifs-page-seperator,
.ifs-main .ifs-sb .ifs-page-seperator,
.ifs-main .ifs-searchareas .ifs-page-seperator {
        background-color: REPLACE_WITH_YOUR_LIGHT_COLOR !important;
}

.ifmodal-overlay .ifs-button.primary,
.ifmodal-wrapper .ifs-button.primary,
.ifs-main .ifs-bottom-tabs .ifs-button.primary,
.ifs-main .ifs-rl .ifs-button.primary,
.ifs-main .ifs-sb .ifs-button.primary,
.ifs-main .ifs-searchareas .ifs-button.primary {
        background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifmodal-overlay .ifs-button.selected,
.ifmodal-wrapper .ifs-button.selected,
.ifs-main .ifs-bottom-tabs .ifs-button.selected,
.ifs-main .ifs-rl .ifs-button.selected,
.ifs-main .ifs-sb .ifs-button.selected,
.ifs-main .ifs-searchareas .ifs-button.selected {
        background-image: linear-gradient(to right,
REPLACE_WITH_YOUR_MAIN_COLOR 0, REPLACE_WITH_YOUR_MAIN_COLOR 20px,
transparent 20px) !important;
        border-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
```

```
}

.ifs-main .ifs-range .ifs-range-row.active .ifs-range-circle,
.ifs-main .ifs-range .ifs-range-row.active .ifs-range-active-bar {
    background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .entries-selected.ifs-folder-facet header,
.ifs-main .ifs-facet.entries-selected header {
    background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .ifs-facet .ifs-facet-more,
.ifs-main .ifs-folder-facet .ifs-facet-more {
    color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}



.ifs-main.ifs-displaymode-knowledgemap .ifs-rl .ifs-rl-wrapper .ifs-naming
.ifs-filterbar-hook {
    background-color: REPLACE_WITH_YOUR_LIGHT_COLOR !important;
}



.ifs-main .ifs-timeline .ifs-bar {
    fill: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}



.ifs-main .ifs-timeline .ifs-timeline-breadcrumb li:last-child span {
    background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .ifs-timeline .ifs-timeline-breadcrumb li:last-child span:after
{
    border-left-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifs-main .ifs-timeline .ifs-timeline-breadcrumb li:last-child span:before
{
    border-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
    border-left-color: transparent !important;
}

.ifs-main .ifs-rl .ifs-rl-header>.ifs-rl-header-right {
    border-left-color: transparent;
}

.ifs-toaster {
    background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}

.ifmodal-overlay .ifs-dropdown>.ifs-dropdown-menu>li.active,
.ifmodal-wrapper .ifs-dropdown>.ifs-dropdown-menu>li.active,
.ifs-bottom-tabs .ifs-dropdown>.ifs-dropdown-menu>li.active,
.ifs-rl .ifs-dropdown>.ifs-dropdown-menu>li.active,
.ifs-sb .ifs-dropdown>.ifs-dropdown-menu>li.active,
.ifs-searchareas .ifs-dropdown>.ifs-dropdown-menu>li.active {
    background-color: REPLACE_WITH_YOUR_MAIN_COLOR !important;
}
```

For more advanced settings, you can use the advanced iFinder configuration.

7.2 Enabling user authentication with users from an LDAP directory

If the user is authenticated against an LDAP server, you must define the domain settings and also configure iFinder accordingly.

7.2.1 Defining domain settings in Confluence

1. In Confluence, navigate to **Administration > Manage Apps > iFinder Confluence Search > Configure**.

2. Enter the user domain.

7.2.2 Configuring iFinder users LDAP connection

In iFinder Administration configure the following:

- LDAP connection at **User administration > LDAP connection > LDAP credentials**

- Groups assignment at **User administration > LDAP connection > Group administration**

For more information, see online help in iFinder Administration.

7.3 Enabling encryption with private and public keys

If you want to encrypt the authentication data with your own keys, you can generate keys and refer to them in iFinder Administration and in the configuration of the plugin. The keys are exchanged between iFinder backend and Confluence based on JSON Web Token (JWT). With this, users are passed on to iFinder. The search is performed with the name of the user who is logged on in Confluence.

7.3.1 Generating keys

You can for example generate the keys using **openssl**:

Private key

```
openssl genpkey -algorithm RSA -out if_rsa_private.pem -pkeyopt
rsa_keygen_bits:2048
```

Public key

```
openssl rsa -in if_rsa_private.pem -pubout -outform DER -out
if_rsa_public.der
```

7.3.2   Configuring the private key in Confluence

1. In Confluence, navigate to **Administration > Manage Apps > iFinder Confluence Search > Configure**.

2. Enter the path to the key for transferring the authentication data.
    Sample for Windows path: **C:\Confluence\JWTprofile\if_rsa_public.der**

7.3.3   Configuring Apache Tomcat for JWT tokens

For other elements that need to be exchanged between the systems, you must enable the respective CORS filter settings in the web.xml file for Tomcat. Use the IP address or host name of the integrating portal.

apache-tomcat-<Version>\conf\web.xml

```xml
    <filter>
        <filter-name>CorsFilter</filter-name>
        <filter-class>org.apache.catalina.filters.CorsFilter</filter-
class>
        <init-param>
            <param-name>cors.allowed.origins</param-name>
            <param-value><SERVER></param-value>
        </init-param>
        <init-param>
            <param-name>cors.allowed.methods</param-name>
            <param-value>GET,POST,HEAD,OPTIONS,PUT</param-value>
        </init-param>
        <init-param>
            <param-name>cors.allowed.headers</param-name>
            <param-value>Content-Type,X-Requested-
With,accept,Origin,Access-Control-Request-Method,Access-Control-Request-
Headers, Authorization</param-value>
        </init-param>
        <init-param>
            <param-name>cors.exposed.headers</param-name>
            <param-value>Access-Control-Allow-Origin,Access-Control-Allow-
Credentials, Authorization</param-value>
        </init-param>
        <init-param>
            <param-name>cors.support.credentials</param-name>
            <param-value>true</param-value>
        </init-param>
        <init-param>
            <param-name>cors.preflight.maxage</param-name>
            <param-value>10</param-value>
        </init-param>
    </filter>
    <filter-mapping>
        <filter-name>CorsFilter</filter-name>
        <url-pattern>/*</url-pattern>
    </filter-mapping>
```

7.3.4   Configuring JWT tokens in iFinder Administration

1. Save the generated public keys to the iFinder server, for example
    to *C:\IntraFind\keys\if_rsa_public.der.*

2. In iFinder Administration, navigate to **Tools > Advanced configuration**.

3. In the upper-right part, click **Add**.

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4. Add the first key and value from the following table, then click **Save settings**. Repeat this for the second and the third key listed in the table.

Key	Value
ifinder.securefilter. jwt.algorithm	Enter the complete code and modify the path to the JWT key file. ``` var spec = new java.security.spec.X509EncodedKeySpec(IO.readAl l(IO.getInputStream(Configs.CFG.getStr('.ifinde r.securefilter.jwt.secret')))) var kf = java.security.KeyFactory.getInstance('RSA') var publicKey = kf.generatePublic(spec) com.auth0.jwt.algorithms.Algorithm.RSA256(publi cKey) ```
ifinder.securefilter. jwt.secret	Enter the path to the public JWT key file: Sample for Windows path: **C:\Intrafind\keys\if_rsa_public.der**
searchbar.api.cors. whitelist	Enter following with the value for your integrating portal server here. If you add multiple values, separate them with a comma. **Sets.of('https://my-portal:port')**

8 Advanced configuration for Linchpin

If you use iFinder Confluence Search together with a Linchpin header, you can optimize the styling of the search integration.

1. In Confluence go to **General configuration > LINCHPIN THEME > Configuration** and open the **Header** section.

2. In the **Search and Create** area, change the search input type to the following:
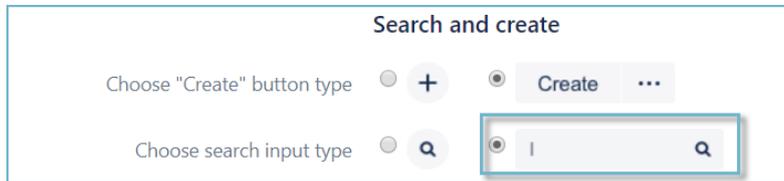
3. On the same page, open the **Advanced** section.

4. Add the following, in the **Custom CSS (use at own risk)** field:

```
.ifc-searchreplacer {
  margin: 0 !important;
}
```

5. Save your settings.

9   Advanced configuration for searching and indexing

ou can access the configuration in Confluence at **Administration > Manage Apps > iFinder Confluence Search > Configure**.

9.1   Settings for searching

Field	Description	Values
iFinder configuration	See Getting started with iFinder Confluence Search	
Authentification	See Advanced configuration for search integration	
Anonymous search	You can enable or disable iFinder Confluence Search for anonymous users that are not logged in to the system.	Enabled/Disabled

9.2   Settings for indexing

In addition to the basic required settings described before, you can, for example, define which spaces are indexed and which content types are excluded from indexing.

> If you change the indexing settings after indexing, a deletion of the iFinder index and complete reindexing is required: Deleting the index.

Field	Description	Values
Index service URL	URL at which the index service is accessible.	http://localhost:9605/hessian/index
Search service URL	URL at which search service is accessible.	http://localhost:9605/hessian/search
Converter service URL	URL at which converter service is accessible.	http://localhost:9602/hessian/converter
Confluence content types which should be indexed or not (true or false)	You can exclude Confluence content types from indexing. For the types that you want to index select **Enabled**. For others, select **Disabled**. If you change these settings after indexing, a deletion of the iFinder index and complete reindexing is required: Deleting the index.	
Spaces		Enabled/Disabled
Pages		Enabled/Disabled

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Field	Description	Values
Attachments		Enabled/Disabled
Blog posts		Enabled/Disabled
Comments		Enabled/Disabled
Personal info		Enabled/Disabled
Archived spaces	Default is **Disabled**. Select **Enabled** if you also want to index archived spaces. The resulting documents are marked with a special value in the field **_str.status** or **_facet.status** (ARCHIVED or CURRENT). If you change these settings after indexing, a deletion of the iFinder index and complete reindexing is required: Deleting the index.	Enabled/Disabled
Spaces to index	A case-insensitive list of spaces to be indexed separated with commas or semicolons. Enter the unique keys of the spaces that you want to index. If nothing is defined here or in the list of excluded spaces, all spaces are indexed. If you change these settings after indexing, a deletion of the iFinder index and complete reindexing is required: Deleting the index. Example: PUBLICSPACE, COMMONSPACE	
Excluded spaces	A case-insensitive list of spaces that are excluded from indexing separated with commas or semicolons. Enter the unique keys of the spaces that you want to exclude from indexing. If a list of excluded spaces is defined, the defined list of spaces to index is ignored completely. If you change these settings after indexing, a deletion of the iFinder index and complete reindexing is required: Deleting the index. Example: SECRETSPACE	

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9.3 Expert settings

The following settings are only relevant for the IntraFind support team and very experienced administrators. Only change the settings in coordination with IntraFind support.

Field	Description	Values
Connector ID	**Do not change.** Unique ID for the connector.	confluence
Index name	**Do not change.** Search scope at which the data is displayed in iFinder5 elastic.	Confluence
Expert: Proxy server	**Only for experts.** Optionally, you can use a proxy server.	http://myproxy
Expert: Proxy port	**Only for experts.** Port for the proxy server	1234
Expert: Proxy user	**Only for experts.** User for the proxy server	
Expert: Proxy password	**Only for experts.** Password for the user. The password is stored encrypted.	
Expert: Converter service timeout	**Only for experts.** Timeout for the converter service	30
Expert: Converter service maximum field length	**Only for experts.** Maximum length in characters of attachments that are sent to the converter. Longer attachments are cut off.	524288
Expert: Regular expression for exluding files	**Only for experts.** Regular expression for attached files that should not be indexed. If a file name of an attachment complies with one of the regular expressions, this attachment is excluded from indexing. Multiple regular expressions may be configured, separated by semicolon. Example: Exclude attachments with the file extensions **.png** and **.jpg** and the file **do_not_index.txt** `.+\.(png|jpg);do_not_index.txt`	

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Field	Description	Values
Expert: World readable permission group	**Only for experts.** General user group with all the users.	S-1-1-0
Expert: Tenant	**Only for experts.** The iFinder5 elastic supports multi-tenancy. Tenants are an additional option to authorize content by logically dividing the index. If no specific tenant is to be used, the default value **public** should be defined here.	public
Markup	Enter **true** if you want the Confluence markup to be indexed to a specific field. This could be relevant if you have additional content in Confluence macros, for example, drop-down menus, which would not be indexed otherwise. If you change this setting after the initial indexing, a deletion of the iFinder index and complete reindexing is required: Deleting the index.	true/false
Expert: Index Linchpin Userprofiles (e.g. rest/cup/1.0)	**Only for experts.** Interface for Linchpin User Profiles. If you do not have Linchpin User Profiles installed, the setting is irrelevant. Can be different for a later Linchpin version.	rest/cup/1.0
Expert: Linchpin administrator	**Only for experts.** Administrator user who is in the group of Confluence administrators to access the Linchpin interface.	
Expert: Linchpin password	**Only for experts.** Password for the administrator user encrypted with **iFinder Administration > Tools > Password encryption.**	
Fields with semantically significant terms	You can insert a script that defines fields as semantically significant terms. For example, you can copy individual fields completely or edit or filter their values.	By default, the fields **_str.label** and **_str.space** are defined as semantically significant terms.

9.4 Deleting the iFinder index

This procedure deletes the complete index of your Confluence content. After this, you need to reindex the content. This can significantly affect the performance of your instance; for larger instances, the process can take hours.

The standard Confluence index is not affected.

1. Open iFinder Administration at http://my_ifinder_server:9680/resource/index.html.

2. Go to **iFinder Administration > Select a product > Tools > Index analyzer > Index viewer**.

3. In the **_facet.indexname** field, enter **Confluence**.

4. Click the **Search** button.

5. Scroll down to **Delete index data**.

6. Click **Delete**.

7. Reindex your Confluence contents as described in Getting started with iFinder Confluence Search: Starting indexing.

10 Advanced iFinder configuration

If you want to use the full functionality, contact our Sales department for detailed information at atlassian@intrafind.com.

11 Uninstalling iFinder

If you want to run the Confluence system without iFinder Confluence Search for testing purposes or due to technical problems, you can deactivate iFinder Confluence Search temporarily with **Manage apps > iFinder Confluence Search > Deactivate**.

11.1 Uninstalling iFinder Confluence Search in Confluence

1. Go to **Manage apps > iFinder Confluence Search**.

2. Click on **Uninstall**.

3. Confirm if required.

4. Remove the user group used for access to iFinder search, for example **ifinder_group**.

11.2 Uninstalling iFinder server with uninstall routines

In case of problems, you can uninstall manually as described under Uninstalling iFinder server manually.

1. Log on to your iFinder server with a user with administration access.

2. Start the *<Installation directory>\9_UNINSTALL.bat* file as administrator: **Context menu > Start as administrator**.

11.3 Uninstalling iFinder server manually

Troubleshooting: If uninstalling the services does not work as described above, proceed as follows:

1. Log on to your iFinder server with a user with administration access.

2. Stop all IntraFind services with **Windows Start menu > Services > IntraFind - Service name > Stop**.

3. To uninstall Apache Tomcat:

    a. Stop the service with **Windows Start menu > Services > Apache Tomcat > Stop**.

    b. Open a command prompt.

    c. Navigate to *<tomcat installation path>/bin/*.

    d. Execute the following command:

    ```
    service.bat remove
    ```

4. To uninstall Elasticsearch:

a. In the command prompt, navigate to *<installation path>/services/if-elasticsearch7/bin/*.

b. Execute the following command:

```
elasticsearch-service.bat remove
```

c. Delete respective folder.

5. For all other IntraFind services in the *<Installation folder>\services* folder (except for if-elasticsearch7):

a. Start *<Installation folder>\services\<if-sv-servicename>\bat***uninstallService.bat**.

b. Delete respective folder.

6. To uninstall iFinder Administration (**if-app-admin-ui**):

a. Start *<Installation folder>\apps\if-app-admin-ui>\bat***uninstallService.bat**.

b. Delete the *<Installation folder>\apps\if-app-admin-ui* folder.

7. To uninstall the JDK, delete the folder.

8. Open the registry by typing **regedit** in **Windows menu** search. Remove all entries starting with **IF_** from the registry at **HKEY_LOCAL_MACHINE\Software**, for example **HKEY_LOCAL_MACHINE\Software\IF_Service_elasticsearch7**.

9. Delete the complete installation directory of iFinder, for example *C:\IntraFind*.

12 Updating a license on iFinder server (iFCS)

When you purchase a license you receive an additional license file. For this, we need the host ID of your iFinder server.

- Windows: To retrieve the host ID, start the **GET_HostID.bat** (Windows) as administrator: **Context menu > Start as administrator** and send it to atlassian@intrafind.com.

- Linux: Extract the **HostID-4.6.11.2.zip** file. Make the file **get_hostid.sh** with **chmod +x get_hostid.sh** and start **get_hostid.sh**.

Proceed as follows to install a new iFinder license on the productive iFinder server for iFinder Confluence Search.

Phase 1: Store the new license file *intrafind.lic* on the server on which the software is installed.

1. Connect to the iFinder server on which the license should be installed.

   > With a 3-node cluster, you must install the license on all three productive servers!

2. Navigate to the folder where you have stored the license file. Default is *C:\IntraFind\license*.

3. Rename the existing license file *intrafind.lic* to *intrafind.lic.bak_<date>*, for example *intrafind.lic.bak_20200504*.

4. Copy the new license file *intrafind.lic* to the folder.

Phase 2: Restart the Tomcat server and services on all servers.

   > Alternatively to the following steps, you can restart the whole server if this is possible in your environment.

1. Log in as a user with administration rights.

2. Start the **RESTART.bat** script (Windows) or restart.sh script (Linux) to stop and start all relevant services.

3. Info for servers: A message of success should be sent back for all started and stopped services.

Phase 3: Check whether searching is working properly.

1. Is the search input field still there?

2. Can you perform a search and get a hit list?

3. Are the known functions still available (e.g. search dropdown/quicksearch)?

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13 Appendix: Installing Headless Chrome

In the following the different methods to install Headless Chrome on Linux systems are described.

13.1 Installing packages directly

Ubuntu

```
wget -q -O - https://dl-ssl.google.com/linux/linux_signing_key.pub | sudo
apt-key add -
sudo sh -c 'echo "deb [arch=amd64] http://dl.google.com/linux/chrome/deb/
stable main" >> /etc/apt/sources.list.d/google.list'
sudo apt update
sudo apt install google-chrome-stable
```

openSuSE

```
sudo zypper ar http://dl.google.com/linux/chrome/rpm/stable/x86_64 Google-
Chrome
sudo zypper in google-chrome-stable
```

CentOS

1. Open **etc/yum.repos.d/google-chrome.repo** in a text editor.

2. Enter the following:

```
[google-chrome]
name=google-chrome
baseurl=http://dl.google.com/linux/chrome/rpm/stable/$basearch
enabled=1
gpgcheck=1
gpgkey=https://dl-ssl.google.com/linux/linux_signing_key.pub
```

3. Perform the installation:

```
yum install google-chrome-stable
```

13.2 Installing direct dependencies with transitive dependencies

Ubuntu

```
sudo apt install ca-certificates fonts-liberation libappindicator3-1
libasound2 libatk-bridge2.0-0 libatk1.0-0 libatspi2.0-0 libc6 libcairo2
libcups2 libdbus-1-3 libexpat1 libgcc1 libgdk-pixbuf2.0-0 libglib2.0-0
libgtk-3-0 libnspr4 libnss3 libpango-1.0-0 libpangocairo-1.0-0 libuuid1
libx11-6 libx11-xcb1 libxcb1 libxcomposite1 libxcursor1 libxdamage1
libxext6 libxfixes3 libxi6 libxrandr2 libxrender1 libxss1 libxtst6 lsb-
release wget xdg-utils
```

openSuSE

```
sudo zypper in R-core SHERPA-MC-devel ShellCheck bash coreutils dosemu
figlet fondu fox16-example-apps gnu-free-fonts gtkwave hashdeep hmaccalc
inn kbd ksh libpfm-devel libshine3 libusbgx-tools lsb-release mailman
metamail nmh notepadqq openmpi openmpi-devel perl perl-Data-ShowTable
perl-String-ShellQuote perl-WWW-Shorten piglit psutils python-Shed_Skin
python-pyside-shiboken python3-pyside-shiboken rgb ruby2.1-rubygem-unicorn
ruby2.2-rubygem-unicorn ruby2.3-rubygem-unicorn ruby2.4-rubygem-unicorn
samba-client sdcc sha1collisiondetection shake shapelib sharutils
shigofumi shotcut shotwell showfont showfoto shp shutter spdylay syslinux
tesseract-ocr update-alternatives v4l-tools vips-tools yast2-devtools
```

CentOS

```
sudo yum install bash libXext redhat-lsb-core expat libXScrnSaver nss
dbus-libs libXtst cairo at-spi2-atk glib2 alsa-lib libXdamage libXrandr
ca-certificates libXrender nss-util libXcursor libappindicator-gtk3 libX11
atk chkconfig at-spi2-core libXi redhat-lsb-core libgcc libXcomposite gtk3
libXfixes wget pango liberation-fonts nspr xdg-utils gdk-pixbuf2 libuuid
glibc cups-libs libxcb
```

13.3 Installing all transitive dependencies

Ubuntu

```
sudo apt install ca-certificates debconf perl-base dpkg tar libacl1
libattr1 libc6 libgcc1 gcc-8-base libselinux1 libpcre3 libbz2-1.0 liblzma5
libzstd1 zlib1g openssl libssl1.1 fonts-liberation libappindicator3-1
libdbusmenu-glib4 libdbusmenu-gtk3-4 libatk1.0-0 libatk1.0-data
libglib2.0-0 libffi6 libmount1 libblkid1 libuuid1 libgdk-pixbuf2.0-0
libgdk-pixbuf2.0-common libjpeg8 libjpeg-turbo8 multiarch-support
libpng16-16 libtiff5 libjbig0 libx11-6 libx11-data libxcb1 libxau6
libxdmcp6 libbsd0 shared-mime-info libxml2 libicu60 libstdc++6 libpango-
1.0-0 fontconfig fontconfig-config fonts-dejavu-core ttf-bitstream-vera
ucf coreutils sensible-utils libfontconfig1 libexpat1 libfreetype6
libthai0 libdatrie1 libthai-data libgtk-3-0 adwaita-icon-theme adwaita-
icon-theme-full gtk-update-icon-cache librsvg2-common librsvg2-2 libcairo2
libpixman-1-0 libxcb-render0 libxcb-shm0 libxext6 libxrender1 libcroco3
libpangocairo-1.0-0 libpangoft2-1.0-0 libharfbuzz0b libgraphite2-3
hicolor-icon-theme ubuntu-mono humanity-icon-theme libatk-bridge2.0-0
libatspi2.0-0 libdbus-1-3 libsystemd0 libgcrypt20 libgpg-error0 liblz4-1
libcairo-gobject2 libcolord2 liblcms2-2 libudev1 libcups2 libavahi-client3
libavahi-common3 libavahi-common-data libgnutls30 libgmp10 libhogweed4
libnettle6 libidn2-0 libunistring2 libp11-kit0 libtasn1-6 libgssapi-krb5-2
```

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```
libcomerr2 libcom-err2 libk5crypto3 libkrb5support0 libkrb5-3 libkeyutils1
libepoxy0 libgtk-3-common dconf-gsettings-backend dconf-service libdconf1
gsettings-backend libjson-glib-1.0-0 libjson-glib-1.0-common librest-0.7-0
libsoup-gnome2.4-1 libsoup2.4-1 glib-networking glib-networking-common
glib-networking-services libproxy1v5 gsettings-desktop-schemas libsqlite3-
0 libwayland-client0 libwayland-cursor0 libwayland-egl1 libwayland-egl1-
mesa libegl1 libegl-mesa0 libdrm2 libdrm-common libgbm1 libwayland-server0
libglapi-mesa libx11-xcb1 libxcb-dri2-0 libxcb-dri3-0 libxcb-present0
libxcb-sync1 libxcb-xfixes0 libxshmfence1 libglvnd0 libxcomposite1
libxcursor1 libxfixes3 libxdamage1 libxi6 libxinerama1 libxkbcommon0 xkb-
data libxrandr2 libindicator3-7 libasound2 libasound2-data libnspr4
libnss3 libxss1 x11-common lsb-base libxtst6 lsb-release distro-info-data
python3:any wget libpsl5 xdg-utils
```

openSuSE

```
sudo zypper in Mesa Mesa-libEGL1 Mesa-libGL1 Mesa-libglapi0 aaa_base
adwaita-icon-theme at-spi2-core bash ca-certificates coreutils cpio
cracklib cups-libs dbus-1 dbus-1-x11 diffutils expat filesystem fillup
findutils fontconfig gdk-pixbuf-loader-rsvg gdk-pixbuf-query-loaders gio-
branding-openSUSE glib-networking glib2-tools glibc grep gsettings-
desktop-schemas gtk3-data gtk3-tools hicolor-icon-theme info insserv-
compat krb5 libLLVM libX11-6 libX11-data libX11-xcb1 libXau6
libXcomposite1 libXcursor1 libXdamage1 libXext6 libXfixes3 libXft2 libXi6
libXinerama1 libXrandr2 libXrender1 libXss1 libXtst6 libXxf86vm1 libacl1
libappindicator3-1 libasound2 libatk-1_0-0 libatk-bridge-2_0-0 libatspi0
libattr1 libaudit1 libavahi-client3 libavahi-common3 libblkid1 libbz2-1
libcairo-gobject2 libcairo2 libcap-ng0 libcap2 libcolord2 libcom_err2
libcrack2 libcroco-0_6-3 libdatrie1 libdb-4_8 libdbus-1-3 libdbusmenu-
glib4 libdbusmenu-gtk3-4 libdrm2 libdrm_amdgpu1 libdrm_intel1
libdrm_nouveau2 libdrm_radeon1 libedit0 libelf0 libelf1 libepoxy0
liberation-fonts libexpat1 libfdisk1 libffi4 libfreebl3 libfreetype6
libgbm1 libgcc_s1 libgcrypt20 libgdbm4 libgdk_pixbuf-2_0-0 libgio-2_0-0
libglib-2_0-0 libgmodule-2_0-0 libgmp10 libgnutls28 libgobject-2_0-0
libgpg-error0 libgraphite2-3 libgtk-3-0 libharfbuzz0 libhogweed2 libidn11
libindicator3-7 libjasper1 libjbig2 libjpeg8 libjson-glib-1_0-0
libkeyutils1 liblcms2-2 liblzma5 libmodman1 libncurses5
libncurses6 libnettle4 libopenssl1_0_0 libp11-kit0 libpango-1_0-0
libpciaccess0 libpcre1 libpixman-1-0 libpng16-16 libproxy1 libreadline6
librest0 librsvg-2-2 libselinux1 libsemanage1 libsepol1 libsmartcols1
libsoftokn3 libsoup-2_4-1 libsqlite3-0 libstdc++6 libsystemd0 libtasn1
libtasn1-6 libthai-data libthai0 libtiff5 libudev1 libustr-1_0-1
libutempter0 libuuid1 libverto1 libwayland-client0 libwayland-server0
libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-render0
libxcb-shm0 libxcb-sync1 libxcb-xfixes0 libxcb1 libxml2-2 libxshmfence1
libz1 libzio1 lsb-release mozilla-nspr mozilla-nss mozilla-nss-certs
ncurses-utils openSUSE-release openSUSE-release-ftp openssl p11-kit p11-
kit-tools pam perl perl-Net-DBus perl-X11-Protocol perl-XML-Parser perl-
XML-Twig perl-base permissions pkg-config sed shadow shared-mime-info
terminfo-base update-alternatives util-linux wget which xdg-utils
```

CentOS

```
sudo yum install device-mapper libXext bc libunistring mesa-libEGL
liberation-narrow-fonts nss-pem initscripts shadow-utils python
libpwquality rpm gsettings-desktop-schemas freetype file-libs libwayland-
server libXtst rpm-libs wget openssl-libs iptables procmail binutils
libselinux dejavu-fonts-common pango libXrandr ca-certificates at sendmail
libepoxy rest libssh2 fribidi libwayland-client libcroco libdrm krb5-libs
adwaita-cursor-theme libpwquality hardlink shared-mime-info mesa-libGL
cracklib xz cyrus-sasl dbus libblkid gmp elfutils-libs time libgcc
libXcomposite groff-base device-mapper-libs libthai libXfixes gettext popt
elfutils-libelf libxshmfence kmod liberation-sans-fonts libmodman bzip2-
libs libsoup redhat-lsb-core crontabs pcre diffutils ncurses libdbusmenu-
gtk3 libacl libnfnetlink acl systemd-libs openldap p11-kit-trust elfutils-
default-yama-scope tzdata libffi findutils libcap-ng glib-networking
pkgconfig libsmartcols basesystem libxml2 libgomp cracklib glibc xz-libs
systemd-libs nss-softokn libgcc libverto nss-util libstdc++ alsa-lib nspr
json-c libsmartcols liberation-serif-fonts jasper-libs psmisc mesa-libgbm
fontconfig libgcrypt harfbuzz libmount trousers p11-kit keyutils-libs
libgusb qrencode-libs libusbx gettext-libs nss keyutils-libs libwayland-
cursor python-libs at-spi2-atk libpciaccess setup mariadb-libs fontconfig
cronie mailx cyrus-sasl gtk3 libdb file libcom_err which krb5-libs gmp
libtasn1 diffutils libtasn1 passwd nss nss-tools lua graphite2 libpipeline
libproxy make libXrender cups-libs dconf avahi-libs pcre bash util-linux
audit-libs iputils postfix glib2 fontpackages-filesystem hesiod mesa-
libglapi libXScrnSaver libuuid libglvnd p11-kit-trust gdk-pixbuf2 expat
colord-libs gtk-update-icon-cache ed procps-ng libjpeg-turbo bzip2-libs
nspr libxkbcommon util-linux libdb patch openssl-libs systemd ncurses-libs
libX11 jbigkit-libs libcap libsemanage libuuid openldap elfutils-libs
cronie-anacron emacs-filesystem pixman info libXxf86vm chkconfig procps-ng
libuser libnetfilter_conntrack ustr pkgconfig iproute freetype liberation-
fonts-common libmount libgpg-error sqlite ncurses-libs libpng at-spi2-core
redhat-lsb-submod-security mesa-libglapi libacl cairo lz4 gdbm curl libdb-
utils libXinerama lcms2 lz4 libcap-ng m4 cyrus-sasl-lib dejavu-sans-fonts
xdg-utils xkeyboard-config gawk libindicator-gtk3 centos-release cyrus-
sasl-lib libdbusmenu json-glib libgcrypt audit-libs libuser libblkid atk
libselinux libsepol sysvinit-tools libidn pam zlib gsettings-desktop-
schemas gzip libX11 dbus-libs pam grep kpartx file-libs libXi cpio glib2
tcp_wrappers-libs hwdata readline libcom_err ncurses-base less nss-util
libXcursor libwayland-egl libappindicator-gtk3 cups-client expat cairo-
gobject libmnl desktop-file-utils filesystem zlib mesa-libgbm libglvnd-glx
libXft spax libXau libgpg-error man-db redhat-lsb-core libcurl liberation-
mono-fonts p11-kit trousers nss-sysinit libglvnd-egl xz-libs hostname
gnutls popt hicolor-icon-theme cracklib-dicts libsepol kmod-libs adwaita-
icon-theme glibc-common nettle nss-softokn-freebl dracut cronie-noanacron
libXdamage elfutils-libelf liberation-fonts libtiff tar coreutils libX11-
common cryptsetup-libs libdrm mesa-libwayland-egl libutempter systemd-sysv
glibc libcap libxcb sed libattr
```

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13.4 Downloading all dependencies on one machine and installing them on another machine

Ubuntu

Download the packages (Ignore the message about packages to be installed, they will not be installed)

```
sudo rm -r /var/cache/apt/archives/*

sudo apt install --download-only ca-certificates debconf perl-base dpkg
tar libacl1 libattr1 libc6 libgcc1 gcc-8-base libselinux1 libpcre3 libbz2-
1.0 liblzma5 libzstd1 zlib1g openssl libssl1.1 fonts-liberation
libappindicator3-1 libdbusmenu-glib4 libdbusmenu-gtk3-4 libatk1.0-0
libatk1.0-data libglib2.0-0 libffi6 libmount1 libblkid1 libuuid1 libgdk-
pixbuf2.0-0 libgdk-pixbuf2.0-common libjpeg8 libjpeg-turbo8 multiarch-
support libpng16-16 libtiff5 libjbig0 libx11-6 libx11-data libxcb1 libxau6
libxdmcp6 libbsd0 shared-mime-info libxml2 libicu60 libstdc++6 libpango-
1.0-0 fontconfig fontconfig-config fonts-dejavu-core ttf-bitstream-vera
ucf coreutils sensible-utils libfontconfig1 libexpat1 libfreetype6
libthai0 libdatrie1 libthai-data libgtk-3-0 adwaita-icon-theme adwaita-
icon-theme-full gtk-update-icon-cache librsvg2-common librsvg2-2 libcairo2
libpixman-1-0 libxcb-render0 libxcb-shm0 libext6 libxrender1 libcroco3
libpangocairo-1.0-0 libpangoft2-1.0-0 libharfbuzz0b libgraphite2-3
hicolor-icon-theme ubuntu-mono humanity-icon-theme libatk-bridge2.0-0
libatspi2.0-0 libdbus-1-3 libsystemd0 libgcrypt20 libgpg-error0 liblz4-1
libcairo-gobject2 libcolord2 liblcms2-2 libudev1 libcups2 libavahi-client3
libavahi-common3 libavahi-common-data libgnutls30 libgmp10 libhogweed4
libnettle6 libidn2-0 libunistring2 libp11-kit0 libtasn1-6 libgssapi-krb5-2
libcomerr2 libcom-err2 libk5crypto3 libkrb5support0 libkrb5-3 libkeyutils1
libepoxy0 libgtk-3-common dconf-gsettings-backend dconf-service libdconf1
gsettings-backend libjson-glib-1.0-0 libjson-glib-1.0-common librest-0.7-0
libsoup-gnome2.4-1 libsoup2.4-1 glib-networking glib-networking-common
glib-networking-services libproxy1v5 gsettings-desktop-schemas libsqlite3-
0 libwayland-client0 libwayland-cursor0 libwayland-egl1 libwayland-egl1-
mesa libegl1 libegl-mesa0 libdrm2 libdrm-common libgbm1 libwayland-server0
libglapi-mesa libx11-xcb1 libxcb-dri2-0 libxcb-dri3-0 libxcb-present0
libxcb-sync1 libxcb-xfixes0 libxshmfence1 libglvnd0 libxcomposite1
libxcursor1 libxfixes3 libxdamage1 libxi6 libxinerama1 libxkbcommon0 xkb-
data libxrandr2 libindicator3-7 libasound2 libasound2-data libnspr4
libnss3 libxss1 x11-common lsb-base libxtst6 lsb-release distro-info-data
python3:any wget libpsl5 xdg-utils
```

Copy the packages to the computer isolated with Air Gap:

```
sudo cp -r /var/cache/apt/archives /path/to/medium
```

Install the packages on the computer isolated with Air Gap:

```
cd /path/to/medium

sudo dpkg -iEG --force-depends archives/*.deb
```

openSuSE

Download the packages:

```
sudo rm -r /var/cache/zypp/packages/*

sudo zypper download Mesa Mesa-libEGL1 Mesa-libGL1 Mesa-libglapi0 aaa_base
adwaita-icon-theme at-spi2-core bash ca-certificates coreutils cpio
cracklib cups-libs dbus-1 dbus-1-x11 diffutils expat filesystem fillup
findutils fontconfig gdk-pixbuf-loader-rsvg gdk-pixbuf-query-loaders gio-
branding-openSUSE glib-networking glib2-tools glibc grep gsettings-
desktop-schemas gtk3-data gtk3-tools hicolor-icon-theme info insserv-
compat krb5 libLLVM libX11-6 libX11-data libX11-xcb1 libXau6
libXcomposite1 libXcursor1 libXdamage1 libXext6 libXfixes3 libXft2 libXi6
libXinerama1 libXrandr2 libXrender1 libXss1 libXtst6 libXxf86vm1 libacl1
libappindicator3-1 libasound2 libatk-1_0-0 libatk-bridge-2_0-0 libatspi0
libattr1 libaudit1 libavahi-client3 libavahi-common3 libblkid1 libbz2-1
libcairo-gobject2 libcairo2 libcap-ng0 libcap2 libcolord2 libcom_err2
libcrack2 libcroco-0_6-3 libdatrie1 libdb-4_8 libdbus-1-3 libdbusmenu-
glib4 libdbusmenu-gtk3-4 libdrm2 libdrm_amdgpu1 libdrm_intel1
libdrm_nouveau2 libdrm_radeon1 libedit0 libelf0 libelf1 libepoxy0
liberation-fonts libexpat1 libfdisk1 libffi4 libfreebl3 libfreetype6
libgbm1 libgcc_s1 libgcrypt20 libgdbm4 libgdk_pixbuf-2_0-0 libgio-2_0-0
libglib-2_0-0 libgmodule-2_0-0 libgmp10 libgnutls28 libgobject-2_0-0
libgpg-error0 libgraphite2-3 libgtk-3-0 libharfbuzz0 libhogweed2 libidn11
libindicator3-7 libjasper1 libjbig2 libjpeg8 libjson-glib-1_0-0
libkeyutils1 liblcms2-2 liblzma5 libmodman1 libmount1 libncurses5
libncurses6 libnettle4 libopenssl1_0_0 libp11-kit0 libpango-1_0-0
libpciaccess0 libpcre1 libpixman-1-0 libpng16-16 libproxy1 libreadline6
librest0 librsvg-2-2 libselinux1 libsemanage1 libsepol1 libsmartcols1
libsoftokn3 libsoup-2_4-1 libsqlite3-0 libstdc++6 libsystemd0 libtasn1
libtasn1-6 libthai-data libthai0 libtiff5 libudev1 libustr-1_0-1
libutempter0 libuuid1 libverto1 libwayland-client0 libwayland-server0
libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-render0
libxcb-shm0 libxcb-sync1 libxcb-xfixes0 libxcb1 libxml2-2 libxshmfence1
libz1 libzio1 lsb-release mozilla-nspr mozilla-nss mozilla-nss-certs
ncurses-utils openSUSE-release openSUSE-release-ftp openssl p11-kit p11-
kit-tools pam perl perl-Net-DBus perl-X11-Protocol perl-XML-Parser perl-
XML-Twig perl-base permissions pkg-config sed shadow shared-mime-info
terminfo-base update-alternatives util-linux wget which xdg-utils
```

Copy the packages to the computer isolated with Air Gap:

```
sudo cp -r /var/cache/zypp/packages /path/to/medium
```

Install the packages on the computer isolated with Air Gap:

```
cd /path/to/medium
sudo rpm -ivF packages/*/*/* --nodeps --replacepkgs
```

CentOS

Install Yumdownloader

```
sudo yum install yum-utils
```

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Download the packages

```
sudo yumdownloader --destdir=/path/to/medium device-mapper libXext bc
libunistring mesa-libEGL liberation-narrow-fonts nss-pem initscripts
shadow-utils python libpwquality rpm gsettings-desktop-schemas freetype
file-libs libwayland-server libXtst rpm-libs wget openssl-libs iptables
procmail binutils libselinux dejavu-fonts-common pango libXrandr ca-
certificates at sendmail libepoxy rest libssh2 fribidi libwayland-client
libcroco libdrm krb5-libs adwaita-cursor-theme libpwquality hardlink
shared-mime-info mesa-libGL cracklib xz cyrus-sasl dbus libblkid gmp
elfutils-libs time libgcc libXcomposite groff-base device-mapper-libs
libthai libXfixes gettext popt elfutils-libelf libxshmfence kmod
liberation-sans-fonts libmodman bzip2-libs libsoup redhat-lsb-core
crontabs pcre diffutils ncurses libdbusmenu-gtk3 libacl libnfnetlink acl
systemd-libs openldap p11-kit-trust elfutils-default-yama-scope tzdata
libffi findutils libcap-ng glib-networking pkgconfig libsmartcols
basesystem libxml2 libgomp cracklib glibc xz-libs systemd-libs nss-softokn
libgcc libverto nss-util libstdc++ alsa-lib nspr json-c libsmartcols
liberation-serif-fonts jasper-libs psmisc mesa-libgbm fontconfig libgcrypt
harfbuzz libmount trousers p11-kit keyutils-libs libgusb qrencode-libs
libusbx gettext-libs nss keyutils-libs libwayland-cursor python-libs at-
spi2-atk libpciaccess setup mariadb-libs fontconfig cronie mailx cyrus-
sasl gtk3 libdb file libcom_err which krb5-libs gmp libtasn1 diffutils
libtasn1 passwd nss nss-tools lua graphite2 libpipeline libproxy make
libXrender cups-libs dconf avahi-libs pcre bash util-linux audit-libs
iputils postfix glib2 fontpackages-filesystem hesiod mesa-libglapi
libXScrnSaver libuuid libglvnd p11-kit-trust gdk-pixbuf2 expat colord-libs
gtk-update-icon-cache ed procps-ng libjpeg-turbo bzip2-libs nspr
libxkbcommon util-linux libdb patch openssl-libs systemd ncurses-libs
libX11 jbigkit-libs libcap libsemanage libuuid openldap elfutils-libs
cronie-anacron emacs-filesystem pixman info libXxf86vm chkconfig procps-ng
libuser libnetfilter_conntrack ustr pkgconfig iproute freetype liberation-
fonts-common libmount libgpg-error sqlite ncurses-libs libpng at-spi2-core
redhat-lsb-submod-security mesa-libglapi libacl cairo lz4 gdbm curl libdb-
utils libXinerama lcms2 lz4 libcap-ng m4 cyrus-sasl-lib dejavu-sans-fonts
xdg-utils xkeyboard-config gawk libindicator-gtk3 centos-release cyrus-
sasl-lib libdbusmenu json-glib libgcrypt audit-libs libuser libblkid atk
libselinux libsepol sysvinit-tools libidn pam zlib gsettings-desktop-
schemas gzip libX11 dbus-libs pam grep kpartx file-libs libXi cpio glib2
tcp_wrappers-libs hwdata readline libcom_err ncurses-base less nss-util
libXcursor libwayland-egl libappindicator-gtk3 cups-client expat cairo-
gobject libmnl desktop-file-utils filesystem zlib mesa-libgbm libglvnd-glx
libXft spax libXau libgpg-error man-db redhat-lsb-core libcurl liberation-
mono-fonts p11-kit trousers nss-sysinit libglvnd-egl xz-libs hostname
gnutls popt hicolor-icon-theme cracklib-dicts libsepol kmod-libs adwaita-
icon-theme glibc-common nettle nss-softokn-freebl dracut cronie-noanacron
libXdamage elfutils-libelf liberation-fonts libtiff tar coreutils libX11-
common cryptsetup-libs libdrm mesa-libwayland-egl libutempter systemd-sysv
glibc libcap libxcb sed libattr
```

Install the packages on the computer isolated with Air Gap:

```
cd /path/to/medium
sudo rpm -ivF *.rpm --nodeps --replacepkgs
```