MediaBeacon 21.03

Complete Installation Guide





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1. Welcome to MediaBeacon's Administrator Guide

Welcome to MediaBeacon's guide for application administrator-level users of our product.

This guide is divided into two main sections:

- Web UI Configuration, configuration of workspaces, components, and other parts of the MediaBeacon Web UI.
- Admin Core, configuration of front-end Administrative functions in MediaBeacon.

Using this Guide

- To navigate through this guide, use the # icons to expand the Table of Contents panel, and click the topic name to read that entry.
- To search across all topic for a text string, use the search field in the upper left corner.
- To download a PDF version of the complete guide, click the "PDF Version" link in the upper right corner of the page.
- To return to the list of all MediaBeacon documentation, click "Other MediaBeacon documentation" in the upper right corner of the page.

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1.2. MediaBeacon Installation Guides

MediaBeacon Installation References

1.2.1. Installing MediaBeacon for Windows

Installing MediaBeacon on Windows

The installer application will be located in the Downloads folder for a Windows User. Download the installer and double-click the downloaded application.

 Select the language that you would like to use for the MediaBeacon Quick Install process and click OK.

| seacon setup | × |
|---------------------------|--|
| Please select a language: | |
| English (United States) | ~ |
| PK | Cancel |
| | Please select a language: English (United States) |

MediaBeacon Setup first checks that you have the prerequisite programs installed on your computer. The most common prerequisite programs are the Java Runtime Environment (64 bit), and Visual C++ 2008 Redistributable (64-bit). The resulting dialog box will let you know if there are missing prerequisites.



- 3. Click the Next > button to view a list of the missing prerequisites in the Prerequisites Wizard.
- 4. If there are no missing prerequisites, the Prerequisites Wizard will still appear, but the action for the prerequisite will display as Skip since it is already installed. If there are missing prerequisites, click the checkbox to the left of the prerequisite installation name and click Next > to install the selected application, or open the website for installation instructions if Flash is the selected application. Leave the checkbox blank to skip the installation of that prerequisite.

| | alled. |
|--|---|
| Name | Status |
| Java Runtime Environment 64 bit | Installed |
| Visual C++ 2008 Redistributable (64-bit) | Installing |
| | |
| Installing Visual C++ 2008 Redistributable (6 C: \Users \mediabeacon \AppData \Roaming \M | i4-bit) from: ediaBeacon\MediaBeacon\prerequisites\v |

- 5. After installing the selected prerequisites, click **Finish**.
- 6. The next dialog is the MediaBeacon Setup Wizard. Click Next > to continue.

MediaBeacon



7. Read through the license agreement and accept the terms by clicking **I accept the terms in the** License Agreement. Click Next > to continue with the installation.

MediaBeacon

| HediaBeacon Setup End-User License Agreement | × |
|---|--|
| Please read the following license agreement carefully | |
| END USER LICENSE AGREEMENT | ^ |
| BY YOUR USE OF THE SOFTWARE, YOU ACKNOWLEDGE TH HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE BOUND BY ITS CONTENTS. YOU ALSO AGREE THAT THIS AGE THE COMPLETE AND EXCLUSIVE STATEMENT OF AGREEMEN BETWEEN ESKO AND YOU AND SUPERSEDES ALL PRIOR REPRESENTATIONS OR AGREEMENTS, ORAL OR WRITTEN, ESKO AND YOU REGARDING THE SUBJECT MATTER OF THIS AGREEMENT. | AT YOU E TO BE REEMENT IS NT BETWEEN |
| NOREEMENT. | ~ |
| I accept the terms in the License Agreement | |
| I do not accept the terms in the License Agreement | |
| Advanced Instal | |
| < Back Nixt > | Cancel |

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| i∰ Mee | diaBeacon stalling M | ediaBeacon | Y |
|--------|------------------------------------|---|-------|
| | Please wa several mi Status: | it while the Setup Wizard installs MediaBeacon. This may take inutes. Installing prerequisite software | |
| | | | |
| Advanc | ed Instal | < Back Next > C | ancel |



8. Select the Installation Folder that MediaBeacon will be installed into. By default, a folder named **MediaBeacon** will be created in the Program Files directory on your Windows system volume information folder. You can choose to use the created MediaBeacon folder or choose a different folder by clicking on the "Browse" button. Once you have selected the folder, MediaBeacon will be installed to click **Next>**.

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| 😸 MediaBeacon Setup | - | | × |
|---|-------------|-------------|-----|
| Select Installation Folder | | | |
| This is the folder where MediaBeacon will be installed. | | | |
| To install in this folder, click "Next". To install to a different folder, e "Browse". | enter it be | low or clic | × |
| Eolder: | | | |
| C:\Program Files\MediaBeacon\MediaBeacon\ | | Browse | |
| Advanced Installer | | | |
| < <u>B</u> ack <u>N</u> ex | 3 | Can | cel |

9. Click Install to install MediaBeacon.

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| MediaBeacon Setup × |
|--|
| Ready to Install |
| The Setup Wizard is ready to begin the MediaBeacon installation |
| Click "Install" to begin the installation. If you want to review or change any of your installation settings, click "Back". Click "Cancel" to exit the wizard. |
| Advanced Installer |



Note: If an **Installer Information** error occurs at this point, a message as follows will be displayed, **A problem with this Windows Installer package**.

10. Click **Finish** to exit the MediaBeacon Setup Wizard.

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11. Double-click the desktop shortcut or navigate from the Start Menu to start the application.



12. MediaBeacon displays several additional screens on the first run after installation. Read through the license agreement, click **I agree to above license**. Click **Next** to continue.

| | on® | > |
|---|--|----|
| MediaBeacon(TM) R3volution Edition Version 22.03.247 MediaBeacon In | c. (www.mediabeacon.co | m) |
| BY YOUR USE OF THE SOFTWARE, YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT, UNDE BE BOUND BY ITS CONTENTS, YOU ALSO AGREE THAT THIS AGREEMENT IS THE COMPLETE AND D AGREEMENT BETWEEN ESKO AND YOU AND SUPERSEDES ALL PRIOR REPRESENTATIONS OR AGREEM BETWEEN ESKO AND YOU REGARDING THE SUBJECT MATTER OF THIS AGREEMENT. | RSTAND IT, AND AGREE TO EXCLUSIVE STATEMENT OF MENTS, ORAL OR WRITTEN, | |
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| I agree to above license | O I do not agree | |
| Previous | Next | |

13. Select the Shared Files Directory that will store all of your assets. By default, a folder called MBAssets will be created in your Home directory. If you want to choose a different folder, click the Change button. When you have selected the desired folder to be the Shared Files Directory, click Next to continue.



14. If the **MBAssets** folder does not already exist, MediaBeacon will ask permission to create it. Click **Yes** to create the folder.

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15. The **Web Address** configuration dialog box appears. Click **Next** to accept the defaults and use the **Automatic address selection**.

| | | × |
|----------|---|---|
| | Web Address | |
| 0 | Please select the web address that MediaBeacon should use to share your assets. If you aren't sure what to do, use "Automatic Address Selection". | |
| | Use secure connection (HTTPS) | |
| | O Make MediaBeacon the main web service (port 80) | |
| | MediaBeacon runs on a custom port 55555 | |
| | Automatic address selection Help Me Decide | |
| | http://ESKW230221.esko-graphics.com:55555/gwtmain/GwtMai | |
| | http://192.168.29.97:55555/gwtmain/GwtMain.html | |
| | http://127.0.0.1:55555/gwtmain/GwtMain.html | |
| | Other http://ESKW230221:55555/gwtmain/GwtMain.html | |
| Previous | Next 📄 | • |

16. MediaBeacon allows you to use email notifications for various actions. The next screen allows you to set up email preferences. In the External SMTP server field, add the address of your SMTP server. In the Sender's E-mail address field, add the email address to use as the sender. In the Sender's full name field, add the name for the sender. Select a maximum attachment size (MB) from the drop-down list that will prevent MediaBeacon from sending an email if it goes over the size limit. After selecting your preferences, click Next.

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| | MediaBeacon can use E-mail to deliver as you notifications about actions taken in I To use E-mail, configure a server below. Disable E-mail in MediaBeacon Use this computer as an SMTP ser (must be configured externally) External SMTP server: Sender's E-mail address: Sender's E-mail address: Sender's full name: Maximum attachment size (MB): Authentication Options | ssets or to send MediaBeacon. ver mediabeacon@localhost.com | Test |
|---------|---|--|--------|
| Previou | 15 | | Next 📄 |

17. The **Password Setup** dialog box will appear. Specify the MBAdmin, or root, password. This password is used to login to MediaBeacon to perform administrative tasks. Click **Next** after you add your password.

| | Password MediaBeaco administra guest pass enabled, a MediaBeaco Administrator: Password: | Setup on must be set up with ative password, and ma sword. If the guest p anyone will be able to on assets. MBAdmin | <pre>x the y optionally use a assword is not view your</pre> |
|----------|---|---|--|
| Previous | | | Ný s 🗪 |

18. Select the proper XMP Acceleration mode for your environment. You should select **Accelerated** unless you have been told otherwise by your MediaBeacon representative.



Note: To manage a large number of files, MediaBeacon has developed a unique method of accelerating the writing of the metadata for each file into the file system. This acceleration works outside of the standard XMP specification but is crucial for reasonable response times on larger databases. This setting only affects the way the files are stored on the server. Files are always downloaded in a completely compatible format.

| | | | | × |
|----------|---------------------------------------|--|--|------|
| | Compatible Balanced Accelerated | Speed Compatibility Speed Compatibility Speed Compatibility | Supports Older Tools Best Performance Tradeoff Optimized Speed | |
| | | Accelerated File Types: All | | _ |
| Previous | | | | Next |

19. Click **Next** to finish the installation and launch MediaBeacon.

20. The first time you launch the software, you will be required to enter a valid license. Your MediaBeacon representative will provide you with the license and will be contacted if you have any issues activating the software. Enter the license information and click **Enter License**.



Attention: The name of the licensor is case-sensitive

| Product License | × |
|---|---|
| MediaBeacon | |
| Thank you for using MediaBeacon! | |
| This software is licensed to you by MediaBeacon, Inc. | |
| You have 0 days left | |
| Your Name | |
| | |
| License Key | |
| | |
| Quit Enter License | |

21. You must activate the license immediately, either by phone or online via the **Activate** and then **Activate Now** buttons.



Note: If your server does not have external internet access, you can use the Activate by phone option. For this option, you must call your MediaBeacon representative and get a string to enter over the phone to activate.

| Product License | × |
|--|-------|
| MediaBeacon* | |
| Thank you for using MediaBeacon! | |
| This Activation screen | × nc. |
| You must activate your license now. Your Nan Activate Now Activate by phone Cancel | |
| License Key | _ |
| 541CB - 241D6 - B3562 - F3430 - 8843A - | 8D8F4 |
| Quit Enter License | |



- **22.**Successful activation allows full use of the application for the allotted license period.
- **23.** After confirming your settings, press Start MediaBeacon. A prompt window will appear for users to install the GhostScript. Click the window to download the installer to your system.

| × | < |
|--|---|
| MediaBeacon | |
| GhostScript is required for specific functionality within MediaBeacon. Please click anywhere on this clalog to initiate the installation of the required version | |

- **24.**Run through and install GhostScript through the downloaded file. Then close the MediaBeacon application, re-open it, and press Start MediaBeacon.
- **25.** Click **Done** and you will be ready to configure your database and related settings in the Enterprise tab of the admin GUI.

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| 🔀 MediaBeacon | - 🗆 🗙 |
|--|--------------------|
| | |
| Start MediaBeacon Memory: 173 of 2,048 MB | |
| Passwords Admin Password | |
| Advanced Settings | |
| Maximum Memory: 2048 V MB (total 6,144 MB) Priority of Preview System High V | Repair Database |
| Preview with external applications Configure Enable sharing on MediaBeacon startup | View Logs |
| Start MediaBeacon Manually Append copyright to outgoing files Configure Enable usage statistics | Movie Profiles |
| | |
| | |
| About | License Apply |



Attention: After installing MediaBeacon, the first start will take several minutes, do not exit out or stop the process until it is complete. You can view progress at the bottom of the admin GUI.

1.2.2. Running MediaBeacon as a Windows Service

MediaBeacon can be run as a service on Windows. The following are intended to intended to be basic setup instructions.

Note that these instructions will need to be followed after any installation or upgrade of the MediaBeacon application.

Windows Service Installation

- **1.** Ensure MediaBeacon is configured and running properly before proceeding with service installation steps.
 - **a.** Note: To run MediaBeacon as a service, the service must be installed using the same Windows user account that was used for the initial MediaBeacon application installation
- **2.** Stop MediaBeacon:
 - a. In the MediaBeacon Server GUI application.
 - a. Under the "Admin" tab: Click "Stop MediaBeacon".

- **b.** Open the Task Manager:
 - a. Ensure that no tasks named "Java(TM) Platform SE Binary" are running.
- c. Exit the MediaBeacon Server GUI application.
- **3.** Open a command prompt. The application must be run as the "Administrator". To do so:
 - a. Press the windows key
 - **b.** Click the search icon, enter "Command Prompt"
 - c. Right-click Command Prompt and choose "Run as administrator"

| Se | arch | |
|------|----------------------|---|
| Ever | ywhere \checkmark | |
| Co | ommand Prompt | P |
| 0:5 | Command Prompt | |
| | Pin to Start | |
| Cc | Pin to Taskbar | |
| | Open in new window | |
| | Run as administrator | |
| | Open file location | |
| | | |

- 4. Determine if MediaBeacon services are installed on the system.
 - a. sc query mediabeacon
- 5. If any service for MediaBeacon is shown:
 - **a.** Change directory to the MediaBeacon installation, which is typically C:\Program Files \MediaBeacon\MediaBeacon.
 - a. cd C:\Program Files\MediaBeacon\MediaBeacon
 - **b.** Uninstall using the following command.
 - a. bin\prunsrv.exe //DS//mediabeacon
- 6. Edit etc\mb_inst.bat.
 - a. Notes:
 - **a.** Ensure you are using a plain text editor.
 - **b.** In a standard install this is located at: C:\Program Files\MediaBeacon\MediaBeacon\etc \mb_inst.bat.

- b. Confirm that the various file paths to MediaBeacon's binaries are accurate. The C:\Program Files\mediabeacon\mediabeacon strings should be replaced with the actual install location if MediaBeacon is installed to a non-default location:
 - a. PR_INSTALL line.
 - **b.** PR_CLASSPATH line, multiple paths.
 - c. PR_LIBRARYPATH line, multiple paths.
 - d. The line under "REM Install Service".
 - e. PR_JVMOPTIONS line, the C:\Program Files\MediaBeacon\MediaBeacon strings should be replaced with the actual install location ifMediaBeacon is installed to a non-default location:
 - a. -Dmb.root=C:\Program Files\Mediabeacon;-Dmb.force.mb.service=true;-Dfile.encoding=UTF-8;
- **c.** Update the PR_JVMMX variable to match the "Maximum Memory" set on the Admin tab of the MediaBeacon Server GUI application (which, in turn, should be set to a value appropriate to the server's use and resources). The default value of 4096 for the PR_JVMMX variable typically matches the default in the MediaBeacon application. If you're unsure of a proper value for your environment, please contact MediaBeacon Support.
- **d.** Do NOT, codify the PR_SERVICEUSER and PR_SERVICEPASSWORD lines. These will be set in subsequent steps.
- 7. In the Command Prompt, run etc\mb_inst.bat to install the service.
 - a. etc\mb_inst.bat
 - **b.** Note, use "Run as administrator" method, as above.
- **8.** Set MediaBeacon service account information:
 - **a.** Open the Services application.
 - b. Right-click MediaBeacon service, choose "Properties".
 - c. Click "Log On" tab.
 - **d.** Enter the username and password of the windows user that the service will be run under. Note: This must match the Windows user account that was used for initial application install.
 - e. Click "Apply", Click "OK".

MediaBeacon

| MediaBeacon Properties (Local Computer) | | | | | | | | |
|---|-----------------------------------|--|--|--|--|--|--|--|
| General Log On Recovery Dependencies | | | | | | | | |
| Log on as: | Log on as: | | | | | | | |
| Local System accour Allow service to in | it iteract with desktop | | | | | | | |
| This account: | .\Administrator Browse | | | | | | | |
| Password: | ••••• | | | | | | | |
| Confirm password: | ••••• | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | OK Cancel Apply | | | | | | | |

- **9.** Optional: Set the MediaBeaconservice's Recovery options:
 - **a.** Open the Services application.
 - **b.** Right-click MediaBeacon service, choose "Properties".
 - **c.** Click "Recovery" tab.
 - **d.** First failure: Restart the Service.
 - e. Second failure: Restart the Service.
 - f. Subsequent failures: Restart the Service.
 - **g.** Reset fail count after: 0 days.
 - **h.** Restart service after: 1 minutes.
 - i. Click "Apply", Click "OK".

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| MediaBeacon P | roperties (Local Computer) | | | | | | |
|--|---|--|--|--|--|--|--|
| General Log On Recovery | Dependencies | | | | | | |
| Select the computer's response actions. | e if this service fails. <u>Help me set up recovery</u> | | | | | | |
| First failure: | Restart the Service 🗸 | | | | | | |
| Second failure: | Restart the Service 🗸 | | | | | | |
| Subsequent failures: | Restart the Service 🗸 | | | | | | |
| Reset fail count after: | 0 days | | | | | | |
| Restart service after: | 1 minutes | | | | | | |
| Enable actions for stops wit | th errors. Restart Computer Options | | | | | | |
| Run program | | | | | | | |
| Program: | | | | | | | |
| | Browse | | | | | | |
| Command line parameters: | | | | | | | |
| Append fail count to end of command line (/fail=%1%) | | | | | | | |
| [| OK Cancel Apply | | | | | | |

j. Start MediaBeacon service: See instructions below.

Starting and Stopping MediaBeacon Running as a Service in Windows

Starting

- **1.** Open "Services" application:
 - a. Right-click MediaBeacon service, choose "Start".
 - **b.** MediaBeacon is now starting and needs no further intervention.
- **2.** OPTIONAL: to monitor MediaBeacon's startup:
 - **a.** Open MediaBeacon Server GUI application.



- **a.** In the MediaBeacon Server GUI application, startup is indicated by
 - **a.** The Start/Stop button (Under the "Admin" tab) is labeled "Stop MediaBeacon".
 - ${\boldsymbol{\mathsf{b}}}.$ The fly out panel is displayed.

| * | MediaBeacon | - • × |
|---|---|---|
| Sharing Admin Enterprise XM | P R3Search | |
| Stop MediaBeacon | Memory: 1,356 of 4,096 MB | |
| Passwords | Preview system has a requests scrieduled | |
| Admin Password ••••• | | |
| Advanced Settings Priority of Preview System Hig Preview with external appl Enable sharing on MediaBee Start MediaBeacon Manually Append copyright to outgo Enable usage statistics | h | Repair Database View Logs Iovie Profiles |
| ŏ | About License [1 of 1] - Verify All: Estimated completion - 34% Scanning C:\Users\Administrator\MBAssets\ | Apply |

Stopping

- **1.** Open "Services" application:
 - **a.** Right-click MediaBeacon service, choose "Stop".

| Q | | Se | rvices | | | - | . 🗆 | x |
|-------------------------|--|--------|--|---|---|---|-----|---|
| File Action View | Help | • | | _ | | | | |
| Services (Local) | Name MediaBea Microsoft Microsoft Microsoft Microsoft Microsoft Multimed Net.Tcp P Network A Network A Network C Network C Network C Network C Network L Network L Network L Network L Network C Network Store Interface Ser | Descri | es In es so rvice s rela s abi ins a twor es o es Dir es th s an s an | Running Running Running Running Running | Startup Type Automatic Manual Manual Manual Disabled Manual Manual Manual Manual Manual Automatic Automatic | Log On As .V.Administ Local Syste Network S Local Syste Local Service Local Syste Network S Local Syste Local Syste Local Service Network S Local Service | | |
| Start service MediaBead | con on Local Computer | | | | | | | |

b. Wait for shutdown progress bar to finish.

| Q. | | Services | | | _ | x |
|------------------|--|---------------|---------|--------------|---------------|---|
| File Action View | Help | | | | | |
| | à 🗟 🚺 🖬 🖬 🕨 🖬 🕪 | | | | | |
| Services (Local) | Name | Description | Status | Startup Type | Log On As | ^ |
| | Sanrica Control | 3 | nning | Automatic | .\Administ | |
| | Service Control | | - | Manual | Local Syste | |
| Windows is atten | noting to stop the following service on La | cal Computer | | Manual | Local Syste | |
| | ····· ··· ···························· | | | Manual | Network S | |
| MediaBeacon | | | | Manual | Local Syste | |
| | | | _ | Disabled | Local Service | = |
| | | | | Manual | Local Syste | |
| | | | | Manual | Network S | |
| | Close | | | Manual | Local Syste | |
| | | | | Manual (Trig | Local Syste | |
| | 🔍 Network List Service | Identifies th | Running | Manual | Local Service | |
| | Network Location Awareness | Collects an | Running | Automatic | Network S | |
| | Chatwark Store Interface Cor | This convice | Dunning | Automatic | Local Convice | |
| | _ \ Extended } Standard / | | | | | _ |
| | | | | | | |

- 2. Open "Task Manager" application.
 - **a.** Ensure that no tasks named "Java(TM) Platform SE Binary" are running.

| R | Task Manager | | | | | | | x | | |
|--------------------------------|----------------------------|---------------|----------|--------|------------------|---------------|--|---|--|--|
| File Options View | | | | | | | | | | |
| Processes | Performance | Users Details | Services | | | | | | | |
| Name | | • | | Status | 0% CPU | 32% Memory | | | | |
| Java Update Checker (32 bit) | | | | | 0% | 1.8 MB | | ^ | | |
| Java Update Scheduler (32 bit) | | | | | 0% | 1.2 MB | | | | |
| 🛃 Java(TM) Platform SE binary | | | | | | 316.5 MB | | | | |
| 🚳 Java(TM) Platform SE binary | | | | | | 642.5 MB | | | | |
| 🏂 Jav | va(TM) Platform | 0% | 950.3 MB | | ~ | | | | | |
| Fewer | Fewer details End task | | | | | | | | | |

- **3.** Shutdown MediaBeacon Server GUI application, if applicable:
 - **a.** Under the "Admin" tab: The Start/Stop button will be greyed out and say "Stop MediaBeacon" (indicating that is shut down)

| X | MediaBeacon | _ □ X |
|--------------------------|---|-------------------------------|
| Media | Beacon® | |
| Sharing Admin Enterprise | se XMP R3Search Memory: 31 of 2,04 Preview system has | 18 MB 0 requests scheduled |
| Admin Password | ••• | |
| Advanced Settings | | |
| Priority of Preview Syst | em High V nal applications Configure | Repair Database |
| Start MediaBeacon Ma | | View Logs |
| Append copyright t | o outgoing files Configure | Movie Profiles |
| | | |
| | | |
| | | About License Apply |

b. Exit the MediaBeacon Server GUI application using the "X" icon in upper left of application window.

1.3. MediaBeacon System Requirements

Hardware

The following are the minimum requirements for MediaBeacon on a distributed system configuration with roughly 500k assets and about 200 concurrent users. MediaBeacon requires high throughput and low latency connections of no more than 1500ms for database access, 1000ms for disk access, and 5ms for connections to distributed components. These are minimum requirements, so hardware capabilities can be increased as needed.

Hardware recommendations for the production, staging, and development environments in a distributed setup are:

| Server Type | Production | Staging | Development |
|-------------------------------|--------------------------------|-------------------------------|---------------------|
| MediaBeacon Primary Server | 16GB RAM, 8 Core CPU | 8GB RAM, 4 Core CPU | 4GB RAM, 2 Core CPU |
| Enterprise Search Engine | 16GB RAM, 8 Core CPU | 8GB RAM, 4 Core CPU | N/A |
| User Concurrency Pack | 16GB RAM, 4 Core CPU (each) | 8GB RAM, 4 Core CPU (each) | N/A |
| Preview | 16GB RAM, 8 Core CPU | 8 GB RAM, 4 CPU | N/A |

Software

Operating Systems

- Windows Server 2014+
- MacOS 10.10+

Supported Database Types

- Microsoft SQL Server 2022
- MySQL8.0

Supported Browsers

- Chrome 89+
- Mozilla Firefox 87+
- Safari 13+
- Microsoft Edge 90+
- iOS Safari 14.3+
- Android 11+

Compatible Versions of Third Party Integrations

- Aspera 3.7
- Vantage 5+ with license for Vantage Transcode, Vantage Analysis, and Metadata Conversion
- Microsoft Office 2011+
- LibreOffice

Software Included in Installation Package

- QuickTime x86, 7.1.0.210
- Java JRE 8, x64, 1.8.0_45
- Graphics Magick, 1.3.40
- Image Magick, 7.1.11
- Visual C++ Redistributable 2005 SP1, 8.0.56336
- Visual C++ Redistributable and 2008, 9.0.30729.6161

No Longer Supported

- Chrome 47-88
- Firefox 74-86
- Safari 9.0-14.2
- Edge 86-89

2. Webhead Manual

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2.2. Introduction
MediaBeacon





A MediaBeacon webhead is a copy of the MediaBeacon web interface that is deployed in an external appserver (e.g. Tomcat, WebSphere, WebLogic, etc.). Webheads have several main uses:

- Creating multiple web interfaces for load balancing and handling more concurrent user sessions.
- Advanced configuration. For example, administrators have more granular control of memory and other settings in Tomcat versus the built-in Jetty web server.
- Advanced configuration. For example, an administrator could theoretically modify the webapp contents in an external server, whereas MediaBeacon's built-in webapp is read-only.

This manual provides basic information on how to install an external MediaBeacon webhead. For configuration questions not addressed here, please contact MediaBeacon Support.

Please email us at support@mediabeacon.com if you find any incorrect or missing information. Send screenshots and/or refer to page numbers in this document where applicable.

2.3. Webhead Installation: Windows

This section will guide administrators through the process of installing a MediaBeacon webhead on Windows.MediaBeacon supports Windows 2019 – Windows Server 2022. 64-bit(x86) is required.

To follow these instructions, install the core MediaBeacon application and download the matching webhead .war file.

- 1. If the webhead is being deployed on a separate server from MediaBeacon, be sure to install a matching version of Java, either through the MediaBeacon installer or manual download.
- 2. Download and install Tomcat 9.0.85. Files and documentation are available here: http://tomcat.apache.org/.



- **3.** Copy these files from a core MediaBeacon installation (e.g. C:\Program Files\ MediaBeacon \MediaBeacon\lib) to the Tomcat 'bin' folder (e.g. C:\Program Files\Apache Software Foundation \Tomcat 9.0.85\bin):
 - jniwrap.lic
 - jniwrap64.dll
- **4.** Once Tomcat is installed, open the "Configure Tomcat" application. In the "Java" tab, set the "Maximum Memory Pool" to 2048 MB. For higher loads, more memory may be required. Contact MediaBeacon Support with any questions.
- **5.** Rename the .war file to match the URL that should be used for accessing the webhead. For example, webhead.war will be accessed at http://localhost:8080/webhead.
- 6. Copy the .war file to: C:\Program Files\Apache Software Foundation\Tomcat 9.0.85\webapps.

| Name | Date modified | Туре | Size |
|-----------------|---------------------------------|---|---|
| 🎉 ROOT | 3/05/2018 0:32 | File folder | |
| mediabeacon.war | 27/09/2022 19:06 | WAR File | 515 478 KB |
| | | | |
| | Name ROOT mediabeacon.war | Name Date modified Image: ROOT 3/05/2018 0:32 Image: mediabeacon.war 27/09/2022 19:06 | Name Date modified Type ROOT 3/05/2018 0:32 File folder mediabeacon.war 27/09/2022 19:06 WAR File |

- 7. MediaBeacon will not accept connections from external applications unless they are explicitly whitelisted on the main server. To allow a connection from the webapp:
 - a. Go to the "Enterprise" tab on the main MediaBeacon server and click "Applications".
 - b. Click "Add" and manually enter the IP address for the webapp. Alternatively, click "Discover External Applications." This will open a temporary 2-minute window during which remote applications are allowed to connect to MediaBeacon, automatically adding them to the whitelist.
 - c. Click "OK".

| Au | thorized External App | plication Addresses | |
|-------------|-----------------------|------------------------|--------|
| Host | Service | Last Connection Time | |
| 4.153.1.224 | Solr | Tue Nov 08 14:59:30 CE | Remove |
| 0.153.1.224 | | [| Remove |
| 0.153.1.144 | | Tue Nov 08 14:59:30 CE | Remove |
| 0.153.1.244 | Preview | Tue Nov 08 14:59:06 CE | Remove |
| 0.153.1.139 | Portal | Tue Nov 08 14:59:30 CE | Remove |
| 0.153.1.29 | Portal | Tue Nov 08 14:59:57 CE | Remove |
| 0.153.1.144 | | | Remove |
| | | | |
| | | | |

- 8. Launch Tomcat.
- **9.** Navigate to http://localhost:8080/gwtmain/GwtMain.html in a web browser (or whatever URL is appropriate, based on the name of the .war file).



MediaBeacon

There shouldn't be any red icons in the Configuration Checker area. Enter the following information:

1. Host:

Enter the IP address of the core MediaBeacon server relative to the webhead server. If they're both running on the same machine, **localhost** is fine.

2. Port:

Use 44444, unless the value for the SOA port was changed on the "Enterprise" tab of the MediaBeacon R3volution server-side GUI application.

3. Password:

The password is set via the "Change Remote Password" button on the "Enterprise" tab of the MediaBeacon R3volution server-side GUI application.

| Med | iaBeacon° | | |
|-------------------------------------|--------------------------------------|------------------------|---------------------|
| Sharing Admin Ent | erprise XMP R3Search | | |
| File server: Altern | ate Data Stream File System 🖌 | | |
| Disable internal Change Remote | Preview System Password Applications | | Port: 44444 |
| Database type | Microsoft SQL Server 🗸 | | |
| Host | Set Password | Port | 1433 |
| Database | New Password | Connections | 200 |
| User Encrypted: Advanced JDBC | Retype Password OK Cancel | Password abasehiame +r | nediabelacor Verify |
| | IMI 2 | | |

10. After entering the Host, Port, and Password, click "OK." A "Continue" button will display if the webhead was able to connect to the main MediaBeacon server.

| Please ente | er your MediaBeacon Core configuration information | | |
|-----------------------|--|--|--|
| Host | localhost | | |
| Port | 44444 | | |
| Password | | | |
| | Continue to MediaBeacon Reconnect to Core | | |
| Configuration Checker | | | |
| Java Version | 1.8.0_121 | | |
| Username | Administrator | | |
| Build | Mediabeacon Version: R3 21.11 (Build: 283) | | |
| \oslash | The web server is configured with enough memory | | |
| \oslash | Default encoding is UTF-8 | | |
| | | | |



11. Click "Continue" to proceed to the MediaBeacon login screen. The webhead is now available for use.

| | MediaBeacon | | | |
|--|---|--|--|--|
| Please enter your MediaBeacon Core configuration information | | | | |
| Portal successfully connected to | o MediaBeacon Core | | | |
| Host | localhost | | | |
| Port | 44444 | | | |
| Password | | | | |
| | Continue to MediaBeacon Reconnect to Core | | | |
| Configuration Checker | | | | |
| Java Version | 1.8.0_121 | | | |
| Username | Administrator | | | |
| Build | Mediabeacon Version: R3 21.11 (Build: 283) | | | |
| \otimes | The web server is configured with enough memory | | | |
| \oslash | Default encoding is UTF-8 | | | |
| \oslash | JNIWrapper is configured correctly | | | |
| | | | | |

2.4. Port Information

Below are the default ports used to connect:

- Connects to MediaBeacon R3volution core: 44444, 44445, and 44446.
- Connects to R3Search node(s): 30000.
- Connects to Zookeeper(s): 31000.
- Connects to the database.
- Connects to external authentication server, if in use (Active Directory, LDAP, etc.).

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3. Remote Preview Nodes

3.1. Introduction

MediaBeacon's R3volution product has been designed to grow from one server with multiple applications to a multi-server cluster. Additional servers on the LAN that are connected to the main instance of MediaBeacon are called Remote MediaBeacon Nodes. These are individual applications that are designed to offload processes from the primary MediaBeacon server and to increase the speed with which certain operations are performed. The Nodes are available as an option with MediaBeacon's N3twork Application Bundle and include the Importer Node, Preview Node, and Events Node. Each node can be installed and configured on designated hardware and collaborates with the main MediaBeacon services. Remote MediaBeacon Nodes are available for MediaBeacon Enterprise Pro only. As the demands grow for MediaBeacon to perform tasks faster and more efficiently, additional nodes can be added.



Note: Additional fees may apply for any or all additional nodes added to the system. Nodes are part of the licensing agreement with MediaBeacon, Inc.

This document will describe the Preview Node and outline the process for installation, configuration, and setup, with detailed step-by-step instructions. Further training is available by contacting a MediaBeacon representative or accessing the MediaBeacon resources page: https://www.mediabeacon.com/resources.

Note:

For additional information or technical questions, please contact the MediaBeacon sales and support team:

sales@mediabeacon.com support@mediabeacon.com https://www.mediabeacon.com/
resources

3.2. Description

The *MediaBeacon Preview* application allows the offloading of asset previewing and conversion from the main MediaBeacon R3volution server. Dedicated servers running *MediaBeacon Preview* are referred to internally as "preview nodes". There can be several nodes attached to a single MediaBeacon server.

3.3. Initial configuration

There are a few requirements that have to be met in order to use the Preview service:

- 1. Preview must be able to access the same database as the primary MediaBeacon server.
- 2. Preview must be able to mount the Shared Files Directory from the primary MediaBeacon server.
- **3.** The IP address of the Remote Preview Node must be whitelisted on the "Enterprise" tab under "Applications" of the main MediaBeacon server.



4. On Mac, install Java 8, which is required to run MediaBeacon 8.0. Download it from: http://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html

3.3.1. Database Requirements

When configuring the database settings within MediaBeacon, be sure to use a hostname or IP address that is accessible outside of the primary MediaBeacon server. If 127.0.0.1 or localhost is used as the host, Preview assumes that the database is on the same system as itself, and not the primary server.

| 🗹 External database | | | |
|---------------------|----------------------------------|-------------|--------|
| Database type | MySQL | | |
| Host | 192.168.1.199 | Port | 3306 |
| Database | MB251 | Connections | 95 |
| User | root | Password | •••• |
| Advanced JDBC: | jdbc:mysql://192.168.1.199:3306/ | MB251?useUn | Verify |

Above is an example of a valid database configuration on the MediaBeacon server.

3.3.2. Database Ports

For the database server, make sure the necessary port is open for database access between the database and the Preview node (typically '3306' for MySQL, '1521' for Oracle, and '1433' for Microsoft SQL Server). Verify that database logins are allowed from the Preview node and using the same database authentication information as the main MediaBeacon server. If MediaBeacon is using MySQL, Preview will need to download the JDBC driver and restart. This is an automatic process that requires access to the internet.

3.3.3. MediaBeacon Ports

| | Sharing Adr | nin Enterprise | XMP | R3Search | |
|---------------|--------------------|--------------------|------|----------------------|--------|
| File server: | Macintosh AFP, V | Vindows CIFS Serve | er 🛟 | | |
| 🗹 External SC | A applications | | | | |
| 🗌 Disable in | ternal Preview Sys | tem | | Enable external arcl | hiving |
| Change Re | mote Password | Applications | D | Port: 44444 | |



Next, verify that the necessary ports are open on the main MediaBeacon server and the database server in order to allow the remote Preview server to connect to them. On the main MediaBeacon server, make sure the "External SOA applications" checkbox is checked under the Enterprise tab of the MediaBeacon server-side Admin Console, and that the port designated in the "Port:" field, and the port above it are allowed through any firewalls between the MediaBeacon server and Preview (the default port is '44444' so both 44444 and 44445 need to be open). Be sure to click on the *Change Remote Password* button in the *External SOA Applications* area and set a password in the windows that pops up. Make a note of this password, as it will be needed to connect Preview to the MediaBeacon server. After making the changes, restart MediaBeacon.

3.4. Preview Node Configuration

| 000 | MediaBeacon Converter | |
|---|------------------------------------|----------------|
| MediaBea | con° | |
| Please select a server and atta | ach to it. | Attach Server |
| Maximum Memory: 512 Priority of Preview System | ▼ High ¢ lications Configure | Movie Profiles |
| Start converter service | | Apply |
| Settings Start MediaBeacon Manual | ly \$ ediaBeacon on start | |
| | Start View Log | |

Here is Preview on initial launch:

3.4.1. External Application

MediaBeacon Preview requires external applications to preview certain asset types.

Windows

• Adobe InDesign (CS5, CS5.5, CS6, CC, CC 2014, CC 2015)



- Adobe InDesign Server
- Microsoft Excel (Office 2007+)
- Microsoft PowerPoint (Office 2007+)
- Microsoft Word (Office 2007+)
- Apache Open Office
- Adobe DNG Converter (handles RAW camera files)
- Adobe Flash (CS5, CS5.5, CS6, CC 2014, CC 2015)

Once the desired applications have been installed on the Preview node, click the *Preview with external applications* checkbox and then the *Configure* button to bring up the window to the right. Choose the applications that Preview should use, and then restart the Preview application for the changes to take effect.

Ensure that the setup here matches that of the main MediaBeacon R3 server.

3.4.2. Start Converter Service

Checking this box allows the MediaBeacon Preview instance to field Loading Dock requests. If the MediaBeacon environment in question has the *Disable internal Preview System* checkbox set (on the *Enterprise* tab of the main MediaBeacon R3volution application), it should be noted that at least one of the MB Preview instances in the environment needs the *Start converter service* checkbox set for the Loading Dock to function. Otherwise all requests (whether conversions or *No Change* downloads) will sit and not become available for download

3.4.3. Movie Profiles

| • • • | | Movie Profiles | | |
|--|------------------|--------------------------------------|--|--|
| Thumbnail Options | | | | |
| Maximum Frame Width: 116 Maximum Frame Height: 116 | | | | |
| Capture Mode | Repeat | + Interval 00 : 00 : 05 | | |
| Profile | Format | Description Prepare Use f Helper App | | |
| MOV 320x240 | QuickTime Movie | QuickTime Movie – 🗹 🗹 | | |
| H.264 Cell Phone | Quick Lime Movie | n/a Smart phone transc | | |
| FLC | FLC | n/a | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| C | | | | |
| Add format | | ÷ Edit Delete | | |
| | | HTML5 Apply | | |



To configure video transcoding and video preview options, click on *Movie Profiles* to bring up the above window, which is identical to the one in the main MediaBeacon application. Ensure that the setup here matches that of the main MediaBeacon R3 server. If there are different codecs available, or different options for the codecs, check that the main MediaBeacon R3 server and preview node have the same versions of QuickTime and any third-party codecs installed. Again, any changes here will require a restart of the MediaBeacon Preview application.

3.4.4. Launch Settings

Next, configure the launch settings. There are four options for launching Preview: Manually, On Login, On Boot, On Boot + Reload.

| Settings | | |
|-------------------|------------------|-------|
| Start MediaBeacor | (Manually | |
| | On Login | |
| Automatically | On Boot | start |
| | On Boot + Reload | |

Manually: This option requires a user to manually launch the Preview application after the host system has finished booting up.

On Login: This will cause the Preview application to launch automatically upon login to the user account on the Preview server.

Automatically launch on start: This checkbox will automatically start the Preview service when the Preview GUI is launched, eliminating the need for the user to click on "Start."

3.5. Connecting Preview to MediaBeacon

3.5.1. Mount 'Shared Files Directory'

Once Preview has been configured, mount MediaBeacon's *Shared Files Directory* to Preview's server with full read and write permissions via AFP or SMB. To do this on a Macintosh, press *Command-k*, enter the server's IP or hostname, and select the correct directory. On Windows, the remote directory must be mapped as a drive letter.

3.5.2. Whitelist Remote IP

By default, the main MediaBeacon server will disallow all remote connections from external applications. Before attaching to the main server, be sure to enter the Remote Preview Node's IP address in the "Enterprise" tab under "Applications". Alternatively, click "Discover External Applications." This will open a temporary 2-minute window during which the main server will accept incoming connections. Attaching to the server during the time will automatically add the Remote Preview Node to the whitelist.

MediaBeacon

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| • • | Authorized External Application Addresse | es |
|---------------|--|--------|
| 192.168.0.1 | | Remove |
| 192.168.0.2 | | Remove |
| 192.168.0.3 | | Remove |
| 192.168.0.4 | | Remove |
| Discover Exte | ernal Applications Add | ОК |

3.5.3. Attach MediaBeacon Server

Next, connect to the main MediaBeacon server by clicking *Attach Server* on the Remote Preview Node. MediaBeacon Preview will automatically show all available MediaBeacon servers it can attach to.

| | 00 | | |
|--------------------------|-----------------------------|------|----------------|
| Please select a server a | 192.168.192.154 Version:8.6 | x | Attach Server |
| _ | 192.168.192.152 Version:8.6 | X | |
| Maximum Memory: | 192.168.192.156 Version:8.6 | X | |
| Priority of Preview Sys | | | Movie Profiles |
| Start converter ser | | | Apply |
| Settings | Custom server | | |
| Start MediaBeacon | 44 | 1444 | |
| Automatically lau | | Join | |

Select appropriate server from the list, click *Join*, and enter the password. This password is set by clicking "Change Remote Password" in the *External SOA Applications* area of the main MediaBeacon server.

MediaBeacon N3twork uses Zero Configuration technology for dynamic discovery of nodes and XML-RPC for passing configuration. If the server doesn't show in the list, it's likely that a firewall is blocking the zero-config protocol used to generate the list, or the Preview node is on a different subnet than the main MediaBeacon server. In either case, simply check the *Custom server* checkbox and type the IP or hostname of the server in the field given, then click *Join*.

Note that port '44444' is just the default MediaBeacon uses for communications between the MediaBeacon server and Preview. If this port is unavailable it is possible to set another value in the *External SOA Applications* area and put that same port in this configuration dialog.

3.5.4. Starting Preview

After the password is accepted, Preview will automatically find the *Shared Files Directory* that's mounted on the preview node. Click *Start*. Preview will now start handling preview requests queued in the database for the main application.

3.6. Logging

MediaBeacon

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| | logfile | |
|------------------------|---|---|
| 8720709 2150125 PMLM | | - |
| [8/20/09 2:50:37 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37.44444 | ſ |
| [8/20/09 2:50:49 PM] N | AediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | L |
| [8/20/09 2:51:01 PM] N | AediaReaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | L |
| [8/20/09 2:51:13 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | L |
| [8/20/09 2:51:25 PM] N | AediaReaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | L |
| [8/20/09 2:51:37 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | I |
| [8/20/09 2:51:49 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | ı |
| 8/20/09 2:52:01 PMI N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | ı |
| 8/20/09 2:52:22 PMI N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | I |
| 8/20/09 2:52:33 PMI N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | I |
| 8/20/09 2:52:45 PMI M | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | ı |
| 8/20/09 2:52:57 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | I |
| [8/20/09 2:53:09 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | h |
| 8/20/09 2:53:21 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | |
| [8/20/09 2:53:33 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | |
| [8/20/09 2:53:45 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | |
| [8/20/09 2:53:57 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | |
| [8/20/09 2:54:09 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | L |
| [8/20/09 2:54:21 PM] N | MediaBeaconNetwork fetchConfiguration: from http://192.168.1.37:44444 | - |
| | | 1 |
| | | |
| | | |
| Level: Fine | 🗘 (Save) (Reload) (Clear) (Search) 🗹 Scroll | |

Above is a screen shot of the logging system, accessible from the *View log* ... button. The logging system is like that used in MediaBeacon. If there are issues with previews, check the logs on the Preview node that handled the request.

3.7. Port Information

Below are the default ports used to connect.

- Connects to MediaBeacon R3volution core: 44444, 44445, and 44446.
- Connects to the database.
- Connects to the file system.

3.8. Running as a Windows Service

Before attempting to set this up, make sure you have MB Preview configured and working (not as a Windows service). This assumes you have attached to Core MediaBeacon R3volution already.

- 1. Edit the file 'etc\mb_preview_inst.bat' by doing the following:
 - Correct the path for Java.
 - Correct the paths for the MB Preview install location.
 - Correct the value for 'mb.mount.point'.
 - Select a good value for maximum memory ('PR_JVMMX', units are MegaBytes).
 - Correct the value for the OS account that runs MediaBeacon ('PR_SERVICEUSER').

MediaBeacon

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- 2. In Windows' services area (ex. run 'services.msc' in Windows 'Run...' menu), use the LogOn tab in the 'MediaBeacon-Preview' service's Properties to set appropriate password for the OS account being used. Leave the default '*******' placeholder in the .bat and set the password after service install to avoid storing the plain text password.
- **3.** In the same Properties area, use the Recovery tab to set the three dropdown menus to 'Restart the Service' so it recovers automatically in the case of a crash.
- **4.** Make sure MB Preview isn't running ('Stop' button in MB Preview GUI, check in Task Manager that there aren't stray 'java.exe' processes, kill them if so), then start the service in Windows' Services UI.
- **5.** Check that 'prunsrv.exe' shows in the 'Details' tab of Task Manager, and that the subordinate 'java.exe' that launches comes up OK.

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4. R3search Cluster Manual

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4.2. Introduction

R3Search is MediaBeacon's built-in enterprise search engine. R3Search is fast, powerful, and is designed to grow with your enterprise and data set. Whenever assets are added to the system, R3Search automatically updates its search index and correlates the new asset with all other existing assets. This index of asset relationships powers the facet search, QuickSearch, Color Search, Date Search, Metrics, and other MediaBeacon search tools.

For increased performance, especially with large data sets, R3Search can be distributed across multiple nodes, called clustering. Multiple nodes biggest benefit is having high availability. By having leader and slaves, the system can intelligently handle issues with nodes in the cluster by changing roles. With its scalable architecture, the cluster can be expanded at any time. As usage of the system and data set increases, more nodes can be added to maintain expected performance. R3Search can grow organically as needs grow, ensuring a consistent and responsive user experience across your enterprise.

4.3. When is Clustering Appropriate?

There is no defined line as to when clustering should take place. A general rule is: if a slow down during queries becomes noticeable, it may be time to consider clustering. This would normally happen on a system with millions of assets. By clustering, the index becomes distributed across multiple shards and decreases its size.

4.4. R3Search Cluster Components

A R3Search cluster contains three primary components: core MediaBeacon, shards, and Zookeepers.

1. Core MediaBeacon

Runs the user interface and serves as the central hub for all R3Search nodes and Zookeepers.

2. Shards

Each shard is hosted on its own separate R3Search node, forming the cluster. There are two types of shards, leaders and slaves. Information is split across all the leaders and the Zookeepers track which leader has what info. Slaves under each leader are an exact copy of the data contained within its leader. (Multiple shards are not necessary for R3Search clustering.)

Each leader that exists increases R3Search's ability to handle a large user load while additional slaves increase replication. See the diagram below for an example. Your setup can contain more or less leaders and slaves than what is depicted.



3. Zookeepers

Zookeepers help track which leader shard has which data. It's important that if multiple Zookeepers exist, they are in an odd quantity. See the Redundancy in a Cluster section for more info.

4.5. Shard Configuration and Performance

As a R3Search document index grows, so does the time spent responding to queries. One solution to this problem is to divide the index into smaller shards and host each of these on a separate R3Search node, forming a cluster. With a smaller index, response performance improves during queries. Adding documents to the collection is slightly slower because the cluster must first determine which shard stores the new document.

Another way to improve performance and availability is through replication, or mirroring of a node. If a cluster is configured with more nodes than shards, each shard will elect a leader to handle making copies of the index to each replica. Incoming queries are load balanced between the leader and all replicas, allowing yet another increase in speed.

Each node in the cluster must be configured with the same number of shards or the cluster will never reach a ready state.

To manage states during hardware failures and downtime, each cluster requires at least one Zookeeper to organize a cluster.

R3Search Cluster Configuration



In this example, the index is split between three shards. If any replica node fails the shard remains intact. If a leader fails, the replica becomes the leader and the shard remains intact. In both cases the shard becomes vulnerable because it is no longer replicated.

Redundancy in a Cluster



Fault tolerance can be achieved by adding additional Zookeepers, which work in a load balanced configuration where more than half of the Zookeepers must remain active after a fault. This makes having an odd number of Zookeepers the ideal configuration as even numbers do not add additional fault tolerance.

For example: With three Zookeepers you can lose one and maintain operation as you have more than half remaining; however, with four Zookeepers you can still only lose one and maintain a majority to have more than half operational. If the tolerance required is one server failure, four Zookeepers is no more tolerant than three. If two server failure tolerance is required, five Zookeepers is ideal and sixth adds no benefit.

Redundant R3Search shards create fault tolerance: In a redundant shard configuration, where data is duplicated across shards, all but one shard in a leader/replica relationship could fail and the indexes would still be available.

4.6. R3Search Clustering in Practice

4.6.1. Installation

In this example, we will configure a sample system with a core MediaBeacon server, 3 Zookeepers (which also run R3Search), and 3 R3Search servers. These steps can be adjusted to suit various system configurations, but the basic progression is the same:

- 1. Configure core MediaBeacon server.
- **2.** Configure Zookeepers.
- **3.** Configure standalone R3Search servers.
- 4. Launch core MediaBeacon server.
- **5.** Launch Zookeepers.
- 6. Launch standalone R3Search servers.

Prior to installation, download the correct R3Search components to each server in the cluster.

Notes:

Zookeepers must run on port 31000.

R3Searches must run on port 30000.

Zookeepers need to be able to communicate with each other and all R3Searches.

R3Searches need SQL access.

Core MediaBeacon Server

 For the R3Search cluster to function, the IP addresses of all servers in the cluster must be white listed on the core MediaBeacon server. On the Enterprise tab, click **Applications** and click **Add**. Enter the IP addresses of all servers in the cluster, including the address of the core MediaBeacon server.

| MediaBeacon MediaBeacon Sharing Admin Ente | | Beaco | n° | | _ | - | | × | | |
|--|----------------|-------------------|--------------------|------------|----------------------|-----|-------|---|--------|---|
| File server: Alterna | te Da | ta Stream File Sy | stem 🤟 | | | | | | | |
| Disable internal P Change Remote P | revie asswo | w System ord | Applicat | ions | Port: | : [| 14444 | | | |
| Database type Host | M | Y Authorized | d External Appli | ation Addr | esses | | | | | > |
| Database | Se | IP Address | Servic | e | Last Connection Time | | | | | |
| | | 10.6.0.71 | | | | | | | Remove | |
| User | S | 10.6.0.75 | | | | | | | Remove | |
| Advanced JDBC: | je | 10.6.0.74 | | | | | | | Remove | |
| | _ | 10.6.0.73 | | | | | | | Remove | |
| Authentication: Sta | ndar | 10.6.0.72 | | | | | | | Remove | |
| | | 10.6.0.76 | | | | | | | Remove | |
| Links | | | | | | | | | | |
| | | Discover Exte | ernal Applications | Add | | | | | (| ж |

2. From the R3Search tab, set the following options:

| MediaBeacon | | | - | | × |
|--|-------------------------------|-----------------|-------|------------|----|
| | on° | R3Sea | rch | ւ |)- |
| Sharing Admin XMP Enterprise R3Sea | arch | | | | |
| Local R3Search Server $ \smallsetminus $ | Refresh | | | | |
| R3Search Only 🗸 | Zookeeper Hosts |] | | | |
| Number of shards | 3 | | Apply | | |
| Unknown status Memory: ?? of ?? | | | | | |
| Disconne | ected: Unable to retrieve lit | st of instances | | | |
| | | | | Refre | sh |
| Automatically start local R3Search | | | Start | View Logs. | |

- **a.** Local R3Search server
- **b.** R3Search Only
- **c.** Number of shards: 3
- **d.** Zookeeper Hosts: List the IP addresses of all Zookeepers for your system. Note: This is different than the white list from Step 1—only list the Zookeeper servers. All Zookeepers run on port 31000.

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| 1 | |
|---|--------|
| | Remove |
| | Remove |
| | Remove |
| | |
| | |
| | |

- e. Disable Automatically start local R3Search.
- f. Click Apply.
- **g.** Make sure R3Search isn't running.
- **3.** Navigate to the Enterprise tab. If you haven't done so, set a remote password by clicking **Change Remote Password**.
- 4. Stop the core MediaBeacon server and shut down the application.
- 5. Delete the contents of the following folder (if it exists), which contains the R3Search cache

C:\Users\Administrator\AppData\Local\Solr

6. Do not restart the core MediaBeacon server until all R3Search servers have been configured.

Zookeeper Server

1. On the Zookeeper servers, set the following options:

| MediaBeacon R3Search Server | | | _ | | × |
|---|-------------------------------|---------------------|-----|-----------|-----|
| | icon° | R3Search | (| - | ÷ |
| | | | Att | ach Serve | |
| Server is not running | | | | | |
| Memory: ?? of ?? | | | | | |
| Settings | | | | | |
| HTTP Port Number | 30000 | | | | |
| Memory Limit (MB) | 512 | | | | |
| Start MediaBeacon Manually $ \smallsetminus $ | | Number of shards | | 3 | |
| R3Search + Zookeeper \checkmark | Zookeeper Hosts | Save Reve | rt | | |
| Di | sconnected: Unable to retriev | e list of instances | | Defr | esh |
| | | | | Refr | esh |
| | Start View Log | About | | | |

- a. HTTP port: 30000 (default)
- b. Memory limit: appropriate value for your system
- c. Number of shards: 3
- d. R3Search + Zookeeper
- **e.** Zookeeper Hosts: List the IP addresses of all Zookeepers for your system. Note: This is different than the white list on the core MediaBeacon server. Only list the Zookeeper servers.
- 2. Click Save
- **3.** Stop R3Search (if running) and quit the application.
- **4.** Delete the contents of the following folder (if it exists), which contains the R3Search cache:

C:\Users\Administrator\AppData\Local\Solr

5. Do not restart the core MediaBeacon server until all R3Search servers have been configured.

R3Search Server

1. On the R3Search servers, set the following options:

| 🚰 MediaBeacon R3Search Server | | | - | | × |
|---|------------------------------|---------------------|-----|------------|---------|
| MediaBea | con° | R3Search | Att | tach Serve |)- r |
| Server is not running | | | | | |
| Memory: ?? of ?? | | | | | |
| Settings HTTP Port Number Memory Limit (MB) Start MediaBeacon Manually v | 30000 | Number of shards | | 3 | |
| R3Search Only 🗸 | Zookeeper Hosts | Save Reve | ert | | |
| Dis | connected: Unable to retriev | e list of instances | | Refr | esh |
| | | | | | |
| [| Start View Log | About | | | |

- a. HTTP port: 30000 (default)
- **b.** HTTP port: 30000 (default)
- c. Number of shards: 3
- d. R3Search Only
- e. Zookeeper Hosts: List the IP addresses of all Zookeepers for your system. Don't forget to include the port number. Note: This is different than the white list on the core MediaBeacon server. Only list the Zookeeper servers.
- 2. Click Save
- **3.** Stop R3Search (if running) and quit the application.
- 4. Delete the contents of the following folder (if it exists), which contains the R3Search cache:

C:\Users\Administrator\AppData\Local\Solr

5. Do not restart the core MediaBeacon server until all R3Search servers have been configured.

Starting up the Cluster

Once the configuration above is in place, start up the cluster by launching the following components in order:

- **1.** Start the core MediaBeacon server.
- **2.** On each Zookeeper server:
 - a. Click "Attach" and select the core MediaBeacon server
 - **b.** Enter the remote password.
 - c. Click Start

| MediaBeacon R3Search Server | | | | - | - 🗆 | × |
|--|-------------------|----------|---------|-----------------|----------|--------|
| | acon° | | R3 | Search | (: | j. |
| Attached MediaBeacon at 192.168.19 | 92.154 | | | | Detach : | Server |
| Jetty is running on port 4,444. Contro | oller is running. | | | | | |
| Memory: 98.91 MB of 455.50 MB | | | | | | |
| Settings | | | | | | |
| HTTP Port Number | 30000 | | | | | |
| Memory Limit (MB) | 512 | | | | | |
| Start MediaBeacon Manually 🗸 | | | Numbe | r of shards | 3 | |
| R3Search + Zookeeper 🗸 | Zookeepe | er Hosts | S | ave Revert | | |
| Index: Sleeping | | Stop | Rebuild | Rebuild Metrics | Con | sole |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | Re | efresh |
| | | | | | | |
| | Stop | View Log | . About | | | |

- **3.** On each R3Search server:
 - **a.** Click **Attach** and select the core MediaBeacon server.
 - **b.** Enter the remote password.
 - c. Click Start.
- **4.** The R3Search cluster is now running. To see the status of the system, go to the MediaBeacon web interface and click **Admin > R3Search Administration**.

| ⊖ ⊖ ⊖ ¥ R3Search Admin × | | | peter.pearson@ 🕰 🐭 | | |
|---------------------------------------|-------------------------------------|----------|----------------------------|--|--|
| ← → C 🗋 10.6.0.71:55555/solr/#/~cloud | → C 🗋 10.6.0.71:55555/solr/#/~cloud | | | | |
| | | | | | |
| R3 | | O shard1 | • 10.6.0.72 O 10.6.0.73 | | |
| | ○ Index | O shard2 | • 10.6.0.76 O 10.6.0.74 | | |
| 📾 Dashboard | | o shard3 | • 10.6.0.77 O 10.6.0.75 | | |
| Logging | | o shard1 | • 10.6.0.72 O 10.6.0.73 | | |
| | Metrics | ⊖ shard2 | • 10.6.0.76 O 10.6.0.74 | | |
| 🖧 Graph | | O shard3 | • 10.6.0.77 Q 10.6.0.75 | | |
| 🌲 Graph (Radial) | | | 01000075 | | |
| & Dump | | | • Leader | | |
| I Core Admin | | | O Active O Recovering | | |
| Java Properties | | | O Down | | |
| Thread Dump | | | O Recovery Failed | | |
| Core Selector | | | | | |
| | | | | | |
| | | | | | |

4.6.2. R3Search Administration: Troubleshooting

There are a few notable places in the Admin area that are especially useful to troubleshooting that we recommend investigating should any issues arise.

Logging

| | Time (Local) | Level | Logger | Message |
|-------------------|----------------------------|-------------|--------------|--|
| Dashboard | 8/11/2015, 10:14:04 AM | WARNING | ZkController | Timed out waiting to see all nodes published as DOWN in our cluster state. |
| Logging | 💃 Last Check: 8/11/2015, 1 | 10:26:29 AM | | Show dates in UT |
| ⊋ Cloud | | | | |
| Core Admin | | | | |
| 🔋 Java Properties | | | | |
| Thread Dump | | | | |

The Logging section is useful to see any warnings or issues that are detected.

Cloud>Graph

This section of the Dashboard shows how the servers are structured and the status of each. The status is indicated by a circle icon to the left of each component.

• Leader: Filled in green circle

Things are running fine and all is well with the leader.

Active: Empty green circle

Indicates a slave. It's running just fine, and replicating the data its leader has.

• Recovering: Empty yellow circle

The shard went down or had an issue and is now working to be functional again.

• Down: Empty orange circle

The shard is not functional.

• Recovery Failed: Empty red circle

The shard attempted to recover from an issue and failed. Human interjection is probably required to correct the issue.

• Gone: Empty gray circle

The shard is not communicating with the cluster at all. The system does not know the shard's status.

When a system encounters an outage, the status of the affected components is updated in the dashboard. Take a look at the following example to see what happens when we lose a shard leader, which is then restarted.

All shards were running and operating normally. Then, we suddenly lose one of the leader shards (10.6.0.77).

| R3 | | ⊖ shard1 | • 10.6.0.72 O 10.6.0.73 |
|---------------------|---------|-------------------|-----------------------------|
| Ţ | Index | \bigcirc shard2 | • 10.6.0.76 O 10.6.0.74 |
| Dashboard | | • shard3 | • 10.6.0.75 |
| Logging | | O shard1 | ● 10.6.0.72 O 10.6.0.73 |
| | Metrics | O shard2 | ● 10.6.0.76 O 10.6.0.74 |
| 🕂 Graph | | - shard3 | • 10.6.0.75 |
| 🔹 Graph (Radial) | | | |
| € Dump | | | • Leader |
| Core Admin | | | O Active |
| are lava Properties | | | O Down |
| Thread Dump | | | O Recovery Failed O Gone |
| | | | |

Notice the lost shards is indicated by an empty gray circle next to the IP of the server. The system intelligently responds to this loss by converting the slave shard of the leader into a leader. It's important to resolve the issue shortly because if the new leader were to encounter an issue, search functionality could potentially begin encountering issues.

We correct the issue and begin bringing the lost shard back up.

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Notice the shard indicates it is recovering, indicated by the empty yellow circle next to it.

Once it is up, the shard that failed, which was once a leader, is now a slave of the new leader.



Cloud > Dump

On rare occasions, the MediaBeacon team may request this data be provided if they are troubleshooting a reported issue.

Core Admin > Index Core

This section is useful to see the number of documents in a shard's R3Search index.

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Core Admin > Index Core > Documents

In the t on the bottom left, select Index. Next, select Documents. Sometimes when troubleshooting, the MediaBeacon team will instruct you to use this area for manually issuing Solr updates.

| R | Request-Handler (qt) /update Document Type |
|-------------------|--|
| Dashboard | JSON |
| Logging | Document(s) |
| 🛖 Cloud | {"id":"change.me","title":"change.me"} |
| Core Admin | |
| 🚡 Java Properties | |
| index • | |
| 1 Overview | Communic Mitch in |
| T Analysis | |
| Dataimport | |
| 🗇 Documents | Overwrite |
| Files | Post |
| 🔤 Ping | 1.0 |
| ᡖ Plugins / Stats | Submit Document |
| Query | |

Core Admin > Index Core > Query

This section is useful for issuing queries to the Solr index. The MediaBeacon team may instruct you to use this area when troubleshooting. An example query we can run here: id:29113.

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| | /select | | | | |
|-----------------------------|----------------------|--|--|--|--|
| | - common | | | | |
| Dashboard | q | | | | |
| 📄 Logging | | | | | |
| 🝚 Cloud | h h | | | | |
| E Core Admin | fq | | | | |
| lava Properties | | | | | |
| java Properties | sort | | | | |
| Thread Dump | | | | | |
| | start, rows | | | | |
| Index + | 0 10 | | | | |
| 1 Overview | fl | | | | |
| T Analysis | | | | | |
| Dataimport | df | | | | |
| C Documents | | | | | |
| Eiler | Raw Query Parameters | | | | |
| Files | key1=val1&key2=val2 | | | | |
| Ping | wt | | | | |
| ᡖ Plugins / Stats | json 🗘 | | | | |
| <i>Q</i> uery <i>Q</i> uery | 🕑 indent | | | | |
| °La Replication | debugQuery | | | | |
| E Schema Browser | □ dismax | | | | |
| | □ edismax | | | | |
| | | | | | |
| | □ facet | | | | |
| | spatial | | | | |
| | spallchack | | | | |

4.7. Port Information

Below are the default ports used to connect.

R3Search

- Connects to MediaBeacon R3volution core: 44444, 44445, and 44446.
- Connects to R3Search node(s): 30000.



- Connects to Zookeeper(s): 31000.
- Connects to the database.

Zookeeper

- Connects to MediaBeacon R3volution core: 44444, 44445, and 44446.
- Connects to R3Search node(s): 30000.
- Connects to Zookeeper(s): 31000.
- Connects to the database.

4.8. Running Standalone R3Search as a Service

MediaBeacon R3Search 7.0+ can be run as a service. The following are intended to intended to be basic setup instructions. Double-check each step to ensure its appropriateness for your particular configuration.

Windows Service Installation

- **1.** Ensure MediaBeacon and R3Search are configured and running properly before proceeding with service installation steps.
- 2. Stop R3Search and exit the server application.
- **3.** Open a command prompt and cd to the R3Search installation, which is typically C:\ **Program Files** \MediaBeacon\MediaBeacon R3Search.
- Run the command `sc query R3Search` to determine if additional MediaBeacon services are installed on the system. If so, run the command `bin\prunsrv.exe // DS//R3Search` to uninstall them.
- 5. Edit etc\r3search_inst.bat to add the user that the service should run as.
 - a. Modify the PR_SERVICEUSER and PR_SERVICEPASSWORD lines. The username should be prefixed with the domain and should match the user account name that R3Search was initially installed under. For the built-in domain, use `.\ username`. For additional information, see: https://commons.apache.org/proper/commons-daemon/procrun.html.
 - b. Confirm that the line starting with `SET PR_JVM=` points to the correct jvm. dll on the system. The location of this file may change depending on the installed Java version and whether it's the JDK or JRE.
 - c. Confirm that the various references to the R3Search binaries are accurate. The 'C:\Program Files\MediaBeacon\MediaBeacon R3Search' strings should be replaced with the actual install location if R3Search is installed to a non-default location.
 - **d.** Update the PR_JVMMX variable to match the 'Memory Limit (MB)' set on the server side standalone R3Search application interface (which, in turn, should be set to a value appropriate to the server's use and resources). If you're unsure of a proper value for your environment, please contact MediaBeacon Support.
 - e. Update the REM JVM configuration section and add the following two entries.
 - **REM Local IP Address**

-Dhost=10.22.116.210

REM Zookeeper Host IP Address

-DzkHost=10.22.116.215:31000

- 6. In the terminal, run `etc\r3search_inst.bat` to install the service.
 - R3Search can now be started and stopped via the server GUI or the Windows Services GUI.

5. External Brand Portal Installation

An **External Portal** is a public facing website that MediaBeacon creates and publishes to S3. External portals allow users to view and download assets outside of MediaBeacon as well as view a subset of the assets metadata. The assets and their data is a static representation of those assets when the portal is created.

5.1. Install Instructions

Build Lambda Zip

- 1. Navigate to this folder in the MB project
 - a. portal_config/external-portal/lambda.
- 2. run npm install in this directory.
- 3. run node build.js -region us-east-2 -bucket mb-bucket-test in this directory.
 - a. Replace the region and bucket with the correct values.
 - **b.** This is the bucket that you will be creating later in the **Setup** section.
- 4. The zip created in the build/ will be used during the Create Lambda function section.

Create Lambda Function

- 1. Create a new function
 - **a.** Navigate to the AWS Lambda function dashboard.
 - **b.** Click the **Create function** button.
 - c. Select Author from scratch.
 - d. Give the function a name like downloadFunction.
 - e. set Runtime to Node.js 12.x
 - f. Under Change default execution role select Use an existing role and select MB_CWLogs-roler1iqfyqr for the role.
 - g. Click Create function.
- 2. Add a REST api Trigger
 - a. Click Add trigger.
 - b. Search for the API Gateway trigger and select it.
 - c. Select Create an API from the drop down.
 - d. Select REST API.
 - e. Under Security select Open.
 - f. Click Add.
 - g. In the API Gateway window copy the API endpoint URL for later.
- 3. Upload the Lambda zip
 - **a.** Select your function name in the **Designer** window.
 - b. In the Code entry type drop down select Upload a .zip file.
 - c. Upload the .zip from the Build Lambda Zip section.
 - d. Click Save.
- 4. Modify the execution parameters

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- a. Scroll down to Basic settings and click Edit.
- **b.** Set **Timeout** to 45 seconds.
- c. Set Memory to 200MB.
- d. Click Save.

Note: These settings can be modified depending on the system.



Note: The size of the files in the system will greatly affect this.

- 5. Give your lambda s3 access
 - **a.** From your lambda configuration page, select the Permissions tab.
 - **b.** Under Execution role click the link to open the role you created in step 1g.
 - c. In the new tab click Attach policies and add the AmazonS3FullAccess policy.

Setup MediaBeacon

1.

Important: Ensure MediaBeacon is S3 enabled.

- **a.** If MediaBeacon is not s3 enabled, these three properties are still required.
 - a. aws.accessKeyId
 - b. aws.secretKey
 - c. aws.defaultRegion
- 2. Create another bucket in s3 to be the destination for the External Portals.
 - a. Set the system property mb.external_portal.s3.bucket to the new bucket name
 - **b.** In the buckets permissions, set **Block all public access** to **Off**.
- **3.** Set the system property mb.external_portal.lambda.url to the URL copied in *Create Lambda function* (step 2g)

Video transcoding

- 1. mb.external_portal.transcoding.suffix needs to be set if your transcoding is anything other than Mpeg4 H.264.mp4.
 - a. mb.external_portal.transcoding.suffix=-Mpeg4 H.264.mp4 is the default.

Note: The Administrator can add a custom URL for the External Portal using a system property. For example,

mb.external_portal.custom.url=https://mycustomURL.com



6. Appendix

E

Note: Administrators can add a template to the SAML account locked screen using saml.static.template.

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7. MS Word as an External Preview App

Users can enable MS Word as an External Preview application by setting it as the default app.

Follow these instructions on Windows 10:

- Navigate to Start > Settings > Set defaults by app (wait until the list of apps to load on the left view).
- 2. Select Word.
- **3.** Click **Set this program as default**.
- 4. Click OK.