

Columbus Imaging

User Manual

Module version 7.6

columbus

Issue: 12.18

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MinHook

MinHook - The Minimalistic API Hooking Library for x64/x86

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HDE 32C / 64C

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General

Thank you very much for choosing Brainware and Columbus. This manual shall give you detailed information about Columbus Imaging. The manual confines itself to the features of Imaging and assumes basic knowledge of Columbus.

Before you deal with Imaging, we would like to recommend reading the manuals **Columbus Installation** as well as **Basics**, which will give you information about the first installation or migration, the basic functions, the configuration of Columbus and the structure and operation of the Management Console.

0.1 Typographical conventions

This manual uses various formats to highlight certain terms and actions. Specific notes and tips are shown with a different background color, according to their importance.

Format	Description
Bold font	Elements in the software or in the operating system, such as menu items, buttons or elements of a selection list
<i>Italic font</i>	Emphases (important details) and links to other chapters or documents
Triangle symbol "➤"	Instruction step
Angle bracket ">"	Command menu sequences, e.g. File > Open
System font	Directories, code and script samples
CAPITAL LETTERS	Key names, e.g. SHIFT, CTRL, or ALT
KEY+KEY	Key combinations, i.e. the user has to hold one key and press another simultaneously, e.g. CTRL+P or ALT+F4.

Note	Used for notes or tips which facilitate the work or for additional information which enhances understanding for the product.
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Important	Information which should be observed by the user, because otherwise problems or additional work may be caused in operation.
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Attention	Information which should be observed by the user in order to prevent malfunctions of the system (crashes, data loss, system failure).
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0.2 Help

Please visit our **Website** <http://www.brainwaregroup.com> for additional information and support. Here you can find all documents, a **KnowledgeBase** <https://kb.brainwaregroup.com/> as well as a support form if you have questions for our specialists.

Support

The support page features a link to the **KnowledgeBase** <https://kb.brainwaregroup.com/>, the support form and information about our customer service.

- Open **www.brainwaregroup.com** <http://www.brainwaregroup.com> in your browser and click on **Support and KnowledgeBase** on the right side.
- Start your search in the **KnowledgeBase** where you can find a list of the most common support cases

If nothing matches your search criteria, you may use the support form for advanced information. Please provide a detailed description of your problem so that our specialists can help you as quick as possible.

- Click on Support Form.
- Please fill in at least the fields marked with an asterisk (*) and click on **Send Question**
 - | You will receive a confirmation that your question has been received in the system.

The support page contains the telephone numbers necessary for telephone contacts.

Documentation

A separate download area is available on our web site for the currently available documentation. This area contains all manuals in PDF and CHM format in German and English language. At present, some of the technical manuals are only available in English.

- Navigate to **www.brainwaregroup.com** <http://www.brainwaregroup.com> in your browser and click on **Downloads + Licenses** on the right side.
- Click on **Login**, enter your **User name** and **Password** and then click on **Register**.
- Please select **Documentation** as download type, then select the desired product and click on **Search**
 - | An overview of all available documents will be displayed.
- Click on the desired format and language to download the PDF/CHM file in the desired form.

You will find the Acrobat Reader on our support page or directly under www.adobe.com.

Note

During the installation the documents are copied by default to the directory named `[C:\Program Files]\Columbus`. In order to display the Console help in German you will have to rename the file `CMC_de.chm` in the `\Console` directory to `CMC.chm`.

Training information

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0.3 Licensing

Relevant for licensing is the number of managed assets based on the valid price list at the time of purchasing the license.

Managed assets are computer systems, e.g. laptops, desktops, servers, virtual servers, thin clients, mobile devices, tablets, every kind of asset for which software can be managed or for which another active management is technically available.

Such an active management can be e.g. the installation of the operating system, the inventori- zation or the distribution of software (no definitive list). The service desired by the customer determines the suites or modules to be licensed.

A license is basically bound to one computer, regardless whether the license is used only once or continuously.

Apart from computers, Columbus is also able to collect data from additional network devices (routers, switches, printers, etc.) which are administered as so-called *Not Managed Devices*. These devices require no Columbus license as long as they have the status *Not Managed*.

Columbus has an active license check for all Columbus modules. License limit violations are signaled both on the Console as well as in the log file.

Summary

The brainwaregroup licensing rules comprise the following:

- Each <ASS> operated by Columbus requires a license.
- The transfer of a license to another computer is limited to replacement purchases.

In case of a license violation

- you will be notified at the start or during your work with the Console,
- entries are generated in the log files.

Important

If the number of managed assets increases, the customer shall bind himself/herself to obtain a new license for the additional ones within 30 days. The Software can restrict or stop the operation after an under-licensing period of 30 days.

A license comprises the temporally unlimited, non-exclusive usage right for the current version of the Software including all hot fixes within one year from the invoice date.

CHAPTER 1

Product Description

Columbus Imaging is part of the business continuity management and offers a practical and easy solution integrated in the daily IT operation to back up and restore hard disks.

Columbus enables backing up complete hard disks on network drives. Such operations can be executed immediately or scheduled for a certain date and time – even the backup of a running computer (Online Disk Imaging) is possible and helps for the automatic data backup without need for the user to become active.

Such disk images can also be restored on hard disks which do not correspond to the hard disk which has been used for creating the image, making it possible to use it for repair measures or hard disk expansion.

CHAPTER 2

Configuration

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This section describes the configuration steps required for the activation of Imaging. The configuration consists of the following steps:

- Understand the functional principle
- Providing the environment
- Activate and assign Indexing Agent
- Configure Indexing Agent
- **Making images available** (on page 13)

2.1 Environment

The function of the imaging module is based on the following principle:




- The administrator configures the Indexing Agent once to determine the location of the root directory for data storage. Any media which can be addressed by Windows via UNC can be used as memory - i.e. not necessarily local disks of the server, but alternatively also NAS, SAN, etc.
- The administrator defines on the Console the type of operation which is to be executed for a client computer - for example, backup of the hard disk.
- The Management Client receives this pending action at the defined date and executes the backup.
- The image stored in the ImageDepot is recognized by the Indexing Agent and the corresponding key data, such as time, size, etc. are saved in the Columbus Database.

Apart from the termination of the imaging via the Management Console, this can be done also by the end user at the Management Client if required.

2.1.1 Depot structure

The setup creates a directory on the Infrastructure Service under \ImgDepot. This directory contains the required program files for the imaging as well as the actually recorded hard disk or partition images.

Note If required (e.g. space problems), the structure can be moved to another drive or a NAS, SAN, but must be moved in whole.
After such a move, the configuration of Indexing Agents must be adapted.

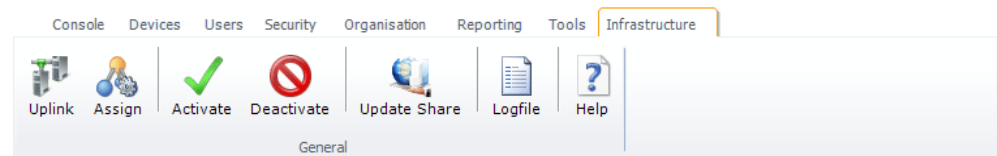
Object	Description
 ImgDepot	Default directory for the complete storage of program files and images. Created by Setup.
 Images	This directory is used to save the generated backup images.
 Tools	The directory which contains the required files and structures for the execution of the imaging tools.


2.2 Activate and assign Indexing Agent

The agent can only be used if it has been assigned to a company and has been activated. At the time of activation, an agent is loaded from the corresponding Infrastructure Service and its function is turned on. After that, the agent loads the standard configuration and starts working.

How to activate the agent

- Navigate to the **Infrastructure** screen in the <CMC_C> and highlight the Infrastructure Service.
 - | The list below shows all agents which are available on this server.
- Highlight Indexing Agent.
 - | The menu ribbon shows all available functions.
- Select the function **Assign** in the **General** menu field.



- Select the company from the list box and click on **Apply**.
 - | The related company will appear in the list under the **Company** column before the Indexing Agent.
- Select the **Activate** function in the menu ribbon.
 - | The  symbol in the first column of the table summary changes and indicates that the agent has been activated.
 - | Date and of time of the last connection are logged in the **Last Contact** column.

In order to determine for which part of the organization shall the agent offer its services, a functional assignment to the structure tree via drag & drop is required.

How to assign the agent to a company or site

- Highlight Indexing Agent.
- Drag the agent per drag & drop on a **company** or **site** in the structure tree.

After this action, the agent will offer its function to the corresponding site and all the sites under it (inheritance) Such an inheritance can be interrupted by assigning a different agent on a lower level. The currently responsible agent for a site is shown in the Console on the **Site Management** tab.

2.3 Configure Indexing Agent

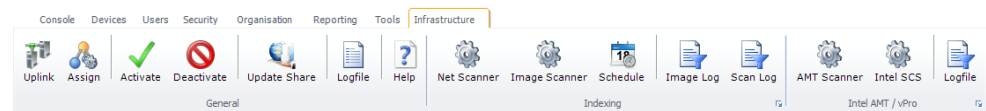
The Indexing Agent automatically searches for created images in the configured depot directories and updates their information in the database.

Note If you adapt directory structures, you should always check the configuration of the related agents.

After the agent has been activated and assigned to a functional unit, it may be configured.

How to configure the agent

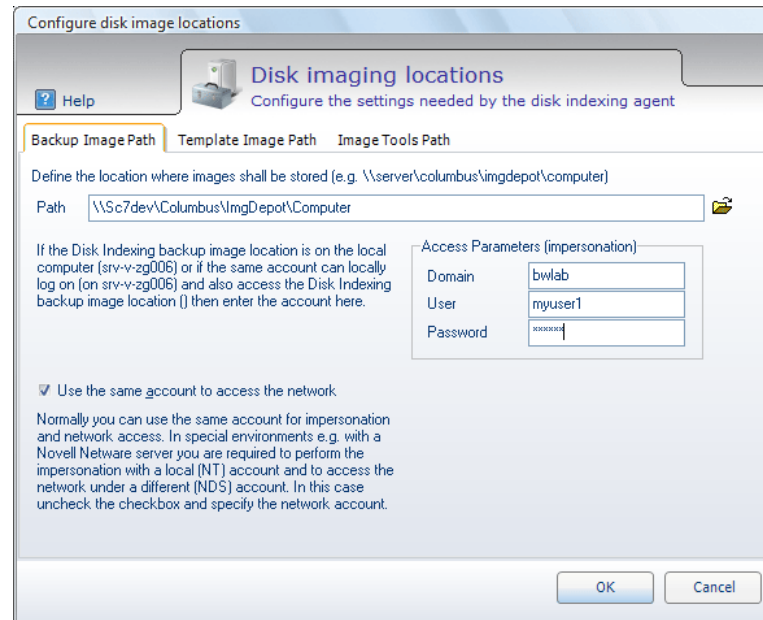
- Highlight the Agent in the **Infrastructure** screen.
- Click the **Image Scanner** function in the menu ribbon.



2.3.1 Root directory

Use this dialog window to define the directory in which the agent shall find the tools and where the disk images are to be read and written. If a disk backup is created, the new images are stored in a subdirectory "\Images".

Note In contrast to other agents, the connection parameters for this agent have to be entered at all times, since they are often used later on by a Windows PE Start.

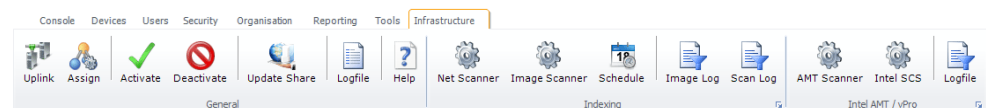


2.4 Making images available

Depending on the planning, the Indexing Agent regularly checks the configured directory for changes and updates the relevant information in the database. Only after this process will updated images be shown in the console.

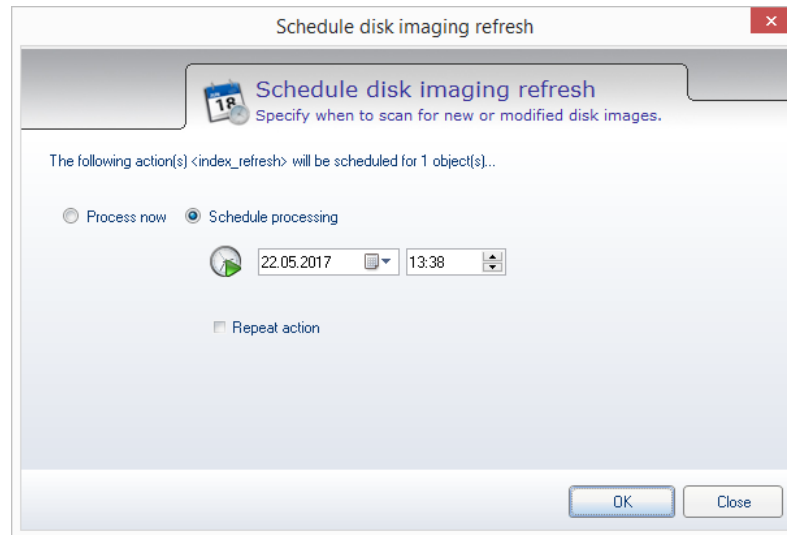
2.4.1 Running the update

- Highlight Indexing Agent on the **Infrastructure** screen.
- Click the **Schedule** function in the menu ribbon.



- Enter the **date** and **start time** for the first update.
 - | Leave the timer set to **00:00** to immediately start the update.
- Highlight the option **Repeat action** for periodical updates as necessary.
 - | Otherwise the update is only executed once.

- Click on **OK** to complete the update.



2.4.2 Time and Frequency of the Update

If you want to execute an update *immediately*,

- Ensure that the current date is entered in the Date field.
- If the time is left unchanged, the update is executed as soon as the dialog window is closed (actions are executed at a later time).
- Do not activate the option for a regular interval so that the update will be carried out only once.

If the update shall be carried out *only once at a certain time*,

- Enter the desired date and time.
- Do not activate the option for a regular interval so that the update will be carried out only once.

If the update shall be carried out in *a regular interval*,

- Enter the start date and time for the first download.
- Mark the option **Job is executed repeatedly**
- Specify the update interval. You can specify this in minutes or days.

Note Even if a regular update interval is already configured, you can still execute a one-time update anytime. The repeating interval will not be overwritten.

Note Also an immediate execution is started as a background process. The server checks for such actions every few minutes to save resources.

If the new Images are not shown automatically in the list, you can refresh the display using the context menu or by pressing the **F5** key.

If an error message is displayed as status, check the log file. The following errors are often caused by wrong configuration settings.

Either the specified directory or the share in the path to the depot directory does not exist or the file authorizations do not allow any access. Check the path names and authorizations. By default, the agent uses the system user account for file access.

2.4.3 Checking the update

- Highlight Indexing Agent on the **Infrastructure** screen.
- Switch to the register **Scheduled Actions**.
 - | Each planned action is included in the list.

Object	Description
Responsible Server	Name of the Infrastructure Service on which the Agent is installed.
Action	Indexing_Refresh
Timer	when the action is carried out,
Repeat	in which interval the action is carried out
Scheduled By	and who has configured the action.

If an action is unsuccessful, it remains in the Action Queue and is repeated by the Infrastructure Service in the usual 5-minute interval until it is completed correctly. This may be the case if e.g. the data path of the connection parameters have been configured incorrectly.

If you wish to delete one or more actions on the list, proceed as follows:

- Highlight the action and select **Delete Selected Action(s)** from the context menu.

CHAPTER 3

Using

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This section describes the basic functions which are required to operate a Imaging system.

3.1 Intro

3.1.1 How to distribute Images

All actions which are to be executed on the computers, are initiated via the Management Console. These actions are then executed on the corresponding computer.

Usually, a cold starting computer is informed via PXE about the pending action of a backup or a restore of an image. For this to happen, PXE must be activated on the computers and the Columbus PXE agent must be activated.

PXE provides automatically important inventory data for the image management from the computer to the Console. These data will later on simplify the image management.

The client installs the Images upon the next start or at a predefined point of time and returns the exact status concerning the installation success to the Management Console.

An image can be created by the Online Disk Imageing Action on a running system.

3.2 Create image via Console

The *Disk Management Operations* function for the creation of an image is available in the detail tab *Disk Management*.

- Activate one or more **computer(s)** in the **Devices** view.
- Activate the Disk Management detail tab and click on **Disk Management Operations**.

Name	Creation	Hostname	Domain/Workgroup	Manufacturer	Device model	Size
ocompack	22.05.2017 11:57:37	WIN-7-X86.bwgdemo.corp	bwgdemo.corp	innotek GmbH	VirtualBox	4260
win-xp-x86.bwgdemo.corp	22.05.2017 11:57:34	win-xp-x86.bwgdemo.corp	bwgdemo.corp	innotek GmbH	VirtualBox	2563
ocompack	18.05.2017 13:24:46	WIN-7-X64.bwgdemo.corp	bwgdemo.corp	innotek GmbH	VirtualBox	8160
COMPBACK	06.04.2017 17:50:33	win-10-x64	bwgdemo.corp	innotek GmbH	VirtualBox	8442

There are two options to create a disk image:

3.2.1 Online imaging

An action is assigned to the locally installed Columbus Management Client to create a backup of the hard disk in an image.

A logged-in user can observe the progress in the Management Client interface. If no user is logged-in, the creation is executed completely in the background.

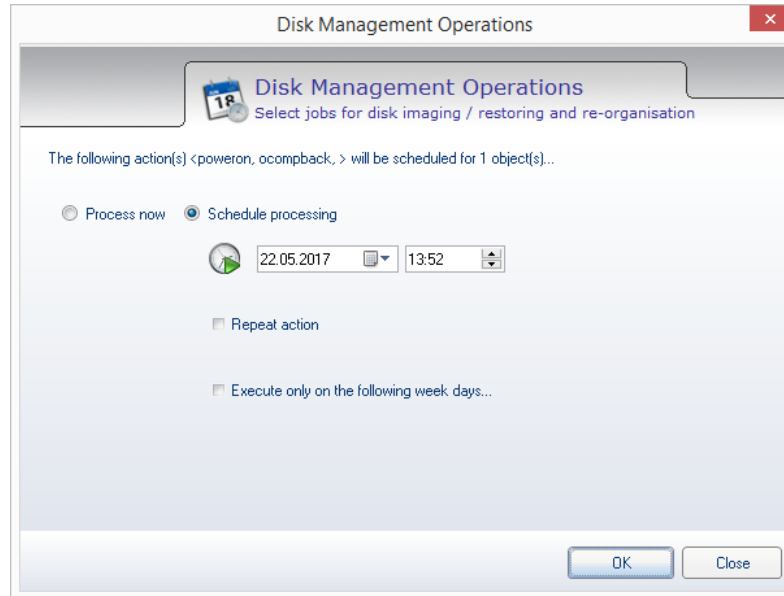
3.2.2 Offline imaging

For these actions, the computer is started with a Windows PE session during a PXE request. A hard disk is backed up and restored during this process.

Note Depending on the Windows installation aim, it is important to select the correct Windows PE architecture.

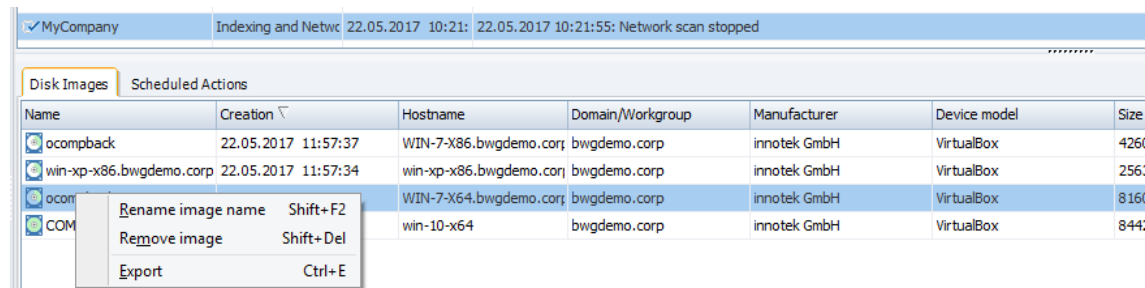
3.2.3 Planning the execution

- The action planning is started by clicking on «Backup» or «Restore».



3.3 Administration of images

The administration of images is carried out in the Infrastructure screen. If you select the Indexing Agent, all images which are saved in the image depot are shown in the list under the *Disk Images* tab.



If you highlight an image, further options are available in the context menu.

3.4 Usage of images in OSDeploy

Instead of using static disk images, we recommend the use of smart capturing containing hardware and domain-independent recoveries. For more information, see the Columbus OS deployment manual, key word *Smart Deployment*.