Columbus Inventory
User Manual

Module version 7.6

columbus

Issue: 12.18
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* This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

**MinHook**

MinHook - The Minimalistic API Hooking Library for x64/x86

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General

Thank you very much for choosing brainwaregroup and Columbus. With this manual, we intend to provide you with a detailed insight into Columbus Inventory. The manual confines itself to the features of Inventory and assumes basic knowledge of Columbus.

Before you start concerning yourself with Inventory, we recommend to read the manuals Columbus Installation and Basic which familiarize you with the initial installation or migration, the basic functions, the configuration of Columbus as well as 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.

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

Note
Used for notes or tips which facilitate the work or for additional information which enhances understanding for the product.

Important
Information which should be observed by the user, because otherwise problems or additional work may be caused in operation.

Attention
Information which should be observed by the user in order to prevent malfunctions of the system (crashes, data loss, system failure).
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.

- 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.

- 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

brainwaregroup is taking all efforts to ensure that our products and solutions will be used and operated in an appropriate, qualified and proper way. Therefore, we are offering various training courses. You can find all information about training types and dates under the Training menu point http://www.brainwaregroup.com/de-ch/kalender/training.html?utm_source=bwg KC&utm_medium=referral.
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 inventory 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.

<table>
<thead>
<tr>
<th>Important</th>
<th>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.</th>
</tr>
</thead>
</table>

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

In this chapter

Intro ................................................................. 10
Inventorization methods .................................... 11
Function ......................................................... 12

This chapter gives a short introduction to the material and describes the basic functions of Columbus Inventory.

1.1 Intro

Columbus Inventory is used for the inventorization of systems managed by Columbus. Inventory comprises several components for various inventorization needs.

The data collected by Columbus Inventory can be further used within the different functions of Columbus (e.g. search, select or report). The combination with Spider <Ass>, Licence and Contract offers a flexible and individual software asset management.

You can use Columbus Inventory for a unique rollout planning as well as for daily operations.

1.1.1 Why inventorization

Can you provide on-the-spot information about
- which IT systems are maintained in your network?
- how the systems are configured?
- which software is installed and how frequently it is used?

Only very few companies are able to answer these or similar questions. To receive meaningful answers to such questions, Columbus Inventory has been developed. It is thus the right tool in the area inventorization for your company and, in combination with Spider, helps you to minimize license fees, error analysis time and downtimes.

1.1.2 Asset Management

The attention of the IT managers increasingly focuses on the standardization, improvement and cost reduction in the company. Asset Management is one means with which to achieve these goals.

Columbus Inventory supplies the technical basic data for a further Asset Management which is covered in the brainwaregroup product family of Spider Asset. This is about the evaluation of IT investment goods, hardware and software, licenses, agreements or service level agreement (SLAs) as well as the question: Who is using what and how intensely?

In cooperation with Spider Asset, Columbus Inventory allows for the acquisition and management of technical, financial and contractual aspects of the IT infrastructure and thus covers important areas in a Lifecycle Management System.
1.2 Inventorization methods

The inventorization requirements vary a lot depending on the current tasking. Therefore, Columbus offers various methods in order to collect inventorization data.

- **Basic inventory** – By Management Client, PXE and manual inputs
- **Management Client with licensed inventory** – Complete inventory data collection, incl. software, hardware and metering (software usage).
- **InventoryScanner** – for detailed inventorization of hardware and software.
- **Inventory Agent** – Complete inventory data collection, incl. software, hardware and metering (software usage).
- **NetworkScanner** – for a centralized inventorization of all network devices, such as computers, routers, switches, printers, etc.
- **Remote Inventory** – Active inventorization on devices that are on the network and online (based on WMI).
- **Manual detection**

1.2.1 Basic inventory

The Management Client automatically collects basic inventory data of the computer required for an efficient software distribution. Furthermore, inventory values can also be read out from software packages using the Columbus script language via the WMI interface and transferred to the database.

During a PXE Request, hardware data are collected and stored for further processing in Columbus.

1.2.2 Inventory Collection Agent

The Inventory Collection Agent is an independently runnable service that collects inventory data periodically and without user interaction. The service is automatically updated from a central point and, contrary to InventoryScanner, can also record the SW use.

1.2.3 InventoryScanner

The function of InventoryScanner is available in different forms. Columbus offers the corresponding component for each application and data requirements.

In case of continuous operation, an installed service is recommended; in case of a single inventory, an application is recommended which is executed in the user context and, e.g. is started with a login script.

All components with inventorization function can be used for all platforms supported by Columbus (Client & Server, Thin Clients, Terminalserver, Citrix Server etc.).
1.2.4 **NetworkScanner**

The NetworkScanner is a module integrated in the Indexing Agent, which looks for active devices in pre-defined IP areas and adds them to the inventory using techniques like Ping, RARP, NetBIOS, SNMP, DNS reverse lookup, etc.

This technology is especially applicable for the exploration of unknown networks and inventory of printers, switches, etc. which are not able to run a Management Client.

If the relevant user data have been stored, the NetworkScanner also collects additional data from WMI.

1.3 **Function**

1.3.1 **System overview**

The following explains the system components and their basic functions which are required for a Columbus system.

**Master Server**

The Master Server, which also contains the Columbus Database, is the core of a Columbus System which is used by all components to communicate with each other. All required information is collected in the Columbus Database and is therefore also available for a comprehensive reporting.

In principle, the Columbus System is based on the fact that, on the one hand, the current status of a device is saved in the database and, on the other, that a new target status is defined by allocation of jobs (e.g. software, operation system) which is then implemented by cooperation of all involved components.

The database basis is Microsoft SQL Server. From the point of view of function, performance and security, this product will certainly meet highest requirements. In case of medium-sized
and small installations, it is also possible to use an Express Edition, which does not entail any license costs.

**Inventory Collection Agent**

As part of the Inventory Collection Agent, the Master Server is responsible for the import or the forwarding of inventory data.

**Management Console**

The management tool of Columbus is the Management Console (CMC). In the Console, data can be reviewed and orders are given for the computers.

Except for a few special functions, the Console does not directly communicate with Clients, but via Master Server. This provides a highly scalable environment in which also the communication paths to be used, and thus router and firewall configurations, are clearly defined.

The Console can either be installed on a central server or on an individual administrative Client.

<table>
<thead>
<tr>
<th>Important</th>
<th>The Management Console enables the access to a variety of functions including the complete new setup of computers. The access to the Console and the definition which user should be allowed to use which functions should be well thought over in order to minimize the risk of operating errors.</th>
</tr>
</thead>
</table>

**InventoryScanner**

The InventoryScanner is started once or in regular intervals on all computers to search the local hard disk for installed files and collect data about the existing hardware.

In addition to cyclically recording the hardware and software data, also metering data can be recorded (software usage), which are then processed in the Spider license management. Decisions on which software is currently used in the company are based on these data and thus permit to prove the use of licenses and to move unused licenses to other computers or no longer extend existing maintenance contracts.

<table>
<thead>
<tr>
<th>Note</th>
<th>In respect of the virtualization of applications or whole desktops, the observation of software usage has become the only reliable way of license evaluation. So, all this is not about monitoring the user behavior, but meeting legal requirements.</th>
</tr>
</thead>
</table>

**Management Client**

The Management Client component is installed on the target computers and checks at each start or depending on the configuration at certain times if allocated packages are available. Following each action, a current status message is returned via Site Server to the Columbus Database.

The Management Client can be installed on a target system by using different techniques.

<table>
<thead>
<tr>
<th>Note</th>
<th>If Inventory is licensed, it may directly be controlled via the Client.</th>
</tr>
</thead>
</table>
1.3.2 Data flow overview

Inventory data are collected and supplied to Spider either directly or indirectly through the Columbus infrastructure, depending on the IT environment and the Columbus components that are used.

Brainware.log

All Columbus components write into a central log file named Brainware.log which is saved in the system directory C:\Windows. All actions, which are executed by Infrastructure Service and Client, are logged in this file. The content of the file is regularly truncated (max. 2 MB) and may be opened and viewed in all commonly used text editors.

**Note**

If the sStandalone InventoryScanner is executed as a simple user and if this user is not allowed to write in C:\Windows, the log file Brainware.log will be written into the public application data directory (CSIDL_COMMON_APPDATA).

Examples:

- C:\Documents and Settings\All Users\Application Data\Columbus in Windows XP
- C:\ProgramData\Columbus in Windows 7
Chapter 2

Installation

In this chapter

Basic Installation .......................................................... 15
Module installation .......................................................... 16

For a description of the requirements and steps for a successful installation of the Columbus basic system please refer to the Installation manual. This chapter describes on the peculiarities of the Inventory installation.

2.1 Basic Installation

For the installation you will need the setup file Columbus 7.5.exe and the license file License.xml. These files are available on our web site www.brainwaregroup.com > Downloads and Licenses.

Every module needs different Columbus components, which are available during installation.

The following components have to be installed at least once for each Columbus System in the network.

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database server</td>
<td>The Database Server is required to make sure that the applications are able to access the data. The Columbus Database consists of two database files and saves all data required for the management of the computers.</td>
</tr>
<tr>
<td>Infrastructure server</td>
<td>The Infrastructure Service provides various agents for the management of Columbus System. At least one Infrastructure Service has to be set up. It can be installed together with the Database Server on one computer.</td>
</tr>
</tbody>
</table>
### 2.2 Module installation

The additional components are required for the installation of Inventory.

#### 2.2.1 NetworkScanner

**Requirement**

**Ports**

The following ports can be used for scanning depending on the set configuration.

- ARP, is not IP / port based
- ICMP, is not port based
- NetBIOS Name Service, Port 137 UDP
- NetBIOS Browser, Port 138 UDP
- SNMP, Port 161 UDP
- (optional) User data for WMI
Considerations

- The better the computer to be scanned by the scanner can be resolved per NetBIOS, DNS, Wins, the more information can be collected from the computer.
- The bigger the network, the more scanners should be used.
- Each subnet should be scanned repeatedly in order to detect probably turned off devices; some devices only reveal their information in the 2nd or 3rd turn.
- By using several scanners you can scan, e.g. independently from the subnet, at different times (server at night and on weekends, desktops on week days during the day).
- There is always one subnet that is forgotten, so an exact planning of the usage is required.
- Computers can only be categorized as server/desktop, if it exists in the network environment of the scan machine; only there, the required information can be queried.
- The computers used for scanning should be members of a domain, at best a member of the domain from which you expect to get the most devices.
In this chapter

Function of NetworkScanner ................................................. 18
Configure NetworkScanner .................................................. 19
Reporting ........................................................................... 24
Faults and Problems .............................................................. 26

The centralized inventorization contains the NetworkScanner (see “Function of NetworkScanner” on page 18).

3.1 Function of NetworkScanner

The NetworkScanner is a module integrated in the Indexing Agent, which looks for active devices in pre-defined IP areas and adds them to the inventory using techniques like Ping, RARP, NetBIOS, SNMP, DNS reverse lookup, etc.

This technology is especially applicable for the exploration of unknown networks and inventorization of printers, switches, etc. which are not able to run a Management Client.

3.1.1 Network browser

The network browser is part of the NetworkScanner and determines the following values based on the information found via the network neighborhood:

- List of domains
- List of computers
- Services provided by the computers
- Type and version of the operating systems

This information is retrieved and managed by the Domain Master Browser. The information obtained by the Domain Master Browser will become obsolete, if computers are shutdown and not online for some time.

If the Domain Master Browser fails, another computer takes over this task. In this case, it can take some time until the information is available again.
3.1.2 **NetworkScanner**

The NetworkScanner uses a predefined list of IP addresses and processes this list according to the specifications. It uses the following methods to get results:

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICMP (Ping)</td>
<td>If the computer is online (may serve as prerequisite for further scans)</td>
</tr>
<tr>
<td>ARP</td>
<td>MAC address</td>
</tr>
<tr>
<td>NetBIOS</td>
<td>Computer name</td>
</tr>
<tr>
<td>DNS Lookup</td>
<td>Name which is registered with the DNS server</td>
</tr>
<tr>
<td>SNMP</td>
<td><em>public</em> Determine properties of a device (contact, description, location, name)</td>
</tr>
</tbody>
</table>

3.2 **Configure NetworkScanner**

The NetworkScanner is integrated in the Indexing Agent, which is also used for configuration. After the agent has been activated and assigned to a functional unit (see page 31), it may be configured.

**How to configure the agent**

- Highlight the Agent in the **Infrastructure** screen.
- Select the **Net Scanner** function in the menu ribbon.
### 3.2.1 Define Running Time

The running time of the NetworkScanner is usually limited to certain days and times. Per each weekday, up to 8 possible *time frames* can be configured.

- Select the day and enter the start and end time.
- Click **Add**.
  - The selected time range will be assigned to the next (free) time frame.

- Repeat this step until you have created all desired time frames.

**Note** Depending on the number of scanners and their selected settings, the network performance could be affected.

To delete a time frame, highlight the entry in the list and click **Remove**. You will be asked whether you want to remove all time frames or only one specific time frame.
3.2.2 Define the IP range

The network segments to be searched by NetworkScanner must be specified.

- Enter the IP addresses in the fields **From** and **To**.
- Click **Add**.

To simplify these entries, defined subnets of known DHCP servers can be read in.

**Note**  
Only DHCP servers running on the same domain as the NetworkScanner can be accessed.

Furthermore, use the File Import function to import the IP addresses from a CSV file. In the CSV file, one line is used to define one range, e.g.:

- **192.168.178.0-192.168.178.255**
- **10.1.10.0-10.1.12.0**
- **1.2.0.0-1.2.255.255**
3.2.3 Import Settings

Here you can manage the domains which are recognized by the network browser. Furthermore, you can specify, which status should be entered into the DB for the computers which belong to a certain domain.

To enable the Scanner to collect advanced information about a device (Windows), it is possible to enter additional domains, user names and passwords.

- In order to automatically detect and enter domains, you can check the box next to Create newly discovered...
- Use Set new domain activation as to determine which status each device of the domain will receive when added.
- In order to change the activation status for a domain already detected, highlight the desired domain and select the new status in the context menu.
3.2.4 Define Scan Type

For the settings to be used by the scanner you have to select a profile or select all settings regarding protocols, delays, desired waiting times/repeats on your own by using the Advanced profile.

- Select the desired scan setting.
- Enter the **SNMP read community string** that you defined in your environment (default: public).
- Highlight the desired options (specify treatment of detected devices) and click **Next**.

- **May import if only the IP address is discovered**
  The IP address is imported in the database, although, except for a successful **Ping**, no other data could be detected.

- **May import if the MAC is unknown**
  The device may be imported in the database, although the MAC address is missing.

- **May classify devices**
  The scanner is allowed to categorize the detected devices (workstation, server, printer, router, etc.). The following may be selected in addition
  - **May Import Computers**
    Computers may be imported.
  - **May Import Printers**
    Printers may be imported.
  - **May import Switches and Routers**
    Switches and Routers may be imported.
  - **May import unknown Devices**
    Unknown devices may be imported.
- **May Scan for AMT Devices**
  The scanner may be scanned according to Intel's AMT by specifying user name and password.

The *Scan Settings* in the selection menu determine the following parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Fast</th>
<th>Normal</th>
<th>Safe</th>
<th>Paranoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolRetries</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>IcmpTimeout (ms)</td>
<td>3.000</td>
<td>300</td>
<td>3.000</td>
<td>3.000</td>
</tr>
<tr>
<td>MaxScanThreads</td>
<td>255</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>IPScanDelayTime (ms)</td>
<td>0</td>
<td>0</td>
<td>10.000</td>
<td>120.000</td>
</tr>
<tr>
<td>ProtScanDelayTime (ms)</td>
<td>0</td>
<td>0</td>
<td>10.000</td>
<td>120.000</td>
</tr>
<tr>
<td>Random*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ScanRepetitions**</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NeedsICMPSuccess*</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>MayScanWithArp*</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>MayScanWithICMP*</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>MayScanWithNetBIOS*</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>MayScanWithSNMP*</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

* 1 = True / 0 = False
** 0 = repeat forever

<table>
<thead>
<tr>
<th>Scan Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolRetries</td>
<td>Specifies how often (per protocol) a new attempt is started, if no answer is received.</td>
</tr>
<tr>
<td>IcmpTimeout</td>
<td>Maximum waiting time for the answer to an ICMP Ping</td>
</tr>
<tr>
<td>MaxScanThreads</td>
<td>Maximum number of parallel scan threads</td>
</tr>
<tr>
<td>IPScanDelayTime</td>
<td>Waiting time after which the scan continues with the next IP.</td>
</tr>
<tr>
<td>ProtScanDelayTime</td>
<td>Waiting time until a thread uses the next protocol for the current IP address</td>
</tr>
<tr>
<td>Random</td>
<td>Specifies, whether the IP addresses will be selected in numerical order (1-10) or randomly</td>
</tr>
<tr>
<td>ScanRepetitions</td>
<td>Specifies how often the scan will be repeated. If '0' is entered, the scan will be repeated continuously.</td>
</tr>
<tr>
<td>NeedsICMPSuccess</td>
<td>In order to continue with the scan of the IP address, the Ping has to be successful (0 / 1)</td>
</tr>
<tr>
<td>May Scan With ARP</td>
<td>Shall use ARP to determine the MAC address (0 / 1)</td>
</tr>
<tr>
<td>May Scan With ICMP</td>
<td>Shall use ICMP (0 / 1)</td>
</tr>
<tr>
<td>May Scan With NetBIOS</td>
<td>Shall use NetBIOS (0 / 1)</td>
</tr>
<tr>
<td>May Scan With SNMP</td>
<td>Shall read SNMP information (0 / 1)</td>
</tr>
</tbody>
</table>
3.3 Reporting

3.3.1 Export Data

You can define in this report which asset data you want to evaluate. The definitions can be saved and retrieved, if necessary.

- Select the **Reporting** menu ribbon in the Console.
- Highlight the computers for which you would like to output information.
- Select the function **Users & Devices > Preselected details for selected objects**.

If this dialog is used for the first time, you have to create a Set, in order to obtain the corresponding information in the report.

- Select **Manage Sets**.
- Create a new set with **Created new Set** and give a name to the set.
- Highlight the desired components and click **Add to Set**.

- Select **Close**.

- Select the corresponding set.

- Select **Report**.

The data for the selected computers are displayed. You can output the data in various formats:
3.4 Faults and Problems

3.4.1 Possible error sources

- Configuration of the routers and switches in the network which probably filter some of the ports
- TTL (Time To Live) in the network; if this value is set too low, some connections to remote parts of the network are probably impossible, because the package is discarded due to timeout.
- Latency / Timeouts
- The traffic load in the network can be so high that some data can get lost on the way. Alternatively, also the scanner can cause too much traffic, if incorrectly configured.
- IDS (Intrusion Detection Systems) could classify the activities of the NetworkScanner as hostile activities and initiate blocks or equivalents.
- On the client side, Firewalls can be responsible for the fact that the computer does not reveal any or only few information about itself.

**Important** When configuring the NetworkScanner, all aspects of the environment (network, computer/server, service hours, off hours, etc.) must be considered. Otherwise, if not configured correctly, the network performance may suffer up to the point where all network activities are stopped.
CHAPTER 4
Active inventory

In this chapter

Application principle ................................................................. 28
Configuration ................................................................. 30
Using ................................................................................. 39
Install the InventoryAgent ......................................................... 40
Install Standalone InventoryScanner ............................................. 41

4.1 Application principle

The functions of the active inventory components are explained in this chapter.

4.1.1 Introduction

Using Management Console you can always determine, which Columbus packages are assigned to which computer. However, this will only detect, what has been installed within the structured framework of Console and Management Client. In order to be able to trace the actually installed application and release the corresponding number of licenses, an exact investigation of the hard disk, windows registry and running applications is required. This is the only way to detect manual installations, downloads and virtual applications.

4.1.2 Basic inventory

The Columbus Management Client and also PXE collect basic inventory data, such as hard disk size, partitions, IP address, MAC address, graphic card, computer model, computer manufacturer, etc.

The basic inventory data are shown in the inventory data overview in the management console:
4.1.3 Software scan

Columbus Management Client, Inventory Scanner and Inventory Agent collect data on locally installed applications which have been correctly registered in the Windows software list. This list contains applications that were installed by carrying out a setup routine.

The data of a software scan are shown in the inventory data overview in the management console:

![Software scan image]

4.1.4 Hardware Scan

Columbus Management Client, Inventory Scanner and Inventory Agent collect data on the hardware integrated on the computer. This list contains all relevant data for the Spider asset and license management.

The data of a hardware scan are shown in the inventory data overview in the Management Console:

![Hardware scan image]
4.1.5 **Columbus assets**

Further detailed hardware information is collected for the exclusive use in Columbus. A large number of data is not relevant for use in Spider and remain in Columbus.

The data of the Columbus assets are shown in the inventory data overview in the Management Console:

![Inventory Data Overview](image)

4.2 **Configuration**

4.2.1 **What must be observed**

Below you will find some tips from the practice which will help you to easily start with the system and notify you about things to be observed.

<table>
<thead>
<tr>
<th>Important</th>
<th>Due to database reasons, only <strong>one single</strong> Inventory Collection Agent can act as <strong>Importer per company</strong> at a time.</th>
</tr>
</thead>
</table>

Further Infrastructure Service can be used as recipients of the scan results. However, they must be configured so that they do not import the data, but forward it to the corresponding import server.

**System load**

Since Importer is an independently running function, no input and output options are available. Therefore, the Importer function can only be monitored through the `Brainware.log` log file and by processing the scan results.
Settings

The options set in the configuration dialog are stored in the registry on the corresponding Infrastructure Service. Under the key

```
HKEY_LOCAL_MACHINE\SOFTWARE\Brainware\Columbus\7\Inventory and Asset Management\Importer
```

the general values for the importer are found, in the subkey `ClientReceiver` you will find the reception parameters for the OTB connection, and in the subkey `ServerTransmitter` you can select or configure a Windows share, FTP or OTB connection through which the imported data will be forwarded.

For 64-bit systems, the key is

```
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Brainware\Columbus\7\Inventory and Asset Management\Importer
```

Configuration parameters

Use the following settings to adjust the behavior of the agent to special situations. These settings shall only be changed upon recommendation of Brainware or an authorized partner and must be made directly in the tab.

<table>
<thead>
<tr>
<th>Important</th>
<th>An improper modification can affect the performance of the complete Columbus System.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CoffeeBreak</strong></td>
<td><strong>Value</strong> &lt;Time in milliseconds&gt;</td>
</tr>
<tr>
<td></td>
<td>Reduces the load on the processor but extends the execution time.</td>
</tr>
<tr>
<td>CoffeeBreak=0</td>
<td></td>
</tr>
<tr>
<td><strong>ImportTimeout</strong></td>
<td><strong>Value</strong> &lt;Timeout in milliseconds&gt;</td>
</tr>
<tr>
<td></td>
<td>Defines the time until the agent is considered to be no longer active. In this case, the thread is terminated by the Infrastructure Service. This causes an automatic restart of the agent in case of error.</td>
</tr>
<tr>
<td>ImportTimeout=7200</td>
<td></td>
</tr>
<tr>
<td><strong>MaxFilesPerRound</strong></td>
<td><strong>Value</strong> &lt;Number of files&gt;</td>
</tr>
<tr>
<td></td>
<td>Defines the number of files to be processed by the agent during its execution interval of 5 minutes.</td>
</tr>
<tr>
<td>ImportTimeout=0x00000064 (Hex)</td>
<td>ImportTimeout=64 (Decimal)</td>
</tr>
<tr>
<td><strong>FullInventoryReplaceOld</strong></td>
<td><strong>Value</strong> Yes / No (1/0)</td>
</tr>
<tr>
<td></td>
<td>Deletes the existing inventory of a device and creates a new one.</td>
</tr>
<tr>
<td>FullInventoryReplaceOld =1</td>
<td></td>
</tr>
</tbody>
</table>
4.2.2 **Activate and assign Inventory Collection 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 **Inventory Collection 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 Inventory Collection 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 Inventory Collection 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.
## 4.2.3 Overview of the inventorization methods

The following overview shows the differences of the various inventorization methods and which data can be collected from them.

<table>
<thead>
<tr>
<th></th>
<th>Inventory-Scanner</th>
<th>Inventory Agent</th>
<th>Management Client</th>
<th>NetworkScanner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed service under Windows</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Rollout via Management Console</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Installation routine (setup.exe)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Execute without installation</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Updating detection .dll</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>HardwareScanning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Software Scanning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>SW metering</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-controlled planning</td>
<td></td>
<td>Outside the product</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Started with login script</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Started with user login</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Started with Windows start</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start without user login</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Central configuration</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Result transfer through TCP port</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Result transfer through FTP</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepared for further tasks (SW installation, imaging, service desk)</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Auto update</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.2.4 Configure the importer

Before the scanned data can be displayed or submitted to the Spider asset management, the inventory data have to be inserted in the database. This task is carried out by the import function of the Inventory Collection Agent. In addition to the import of data from the XML scan results, the agent offers as an option also the possibility to serve as OTB server for Clients, which deliver their inventory results in this way.

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.
- Select the Configure function in the menu ribbon.

**Determining importer function**

Use this register to determine how the importer shall proceed with the scan results.
### Option Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Receiver</td>
<td>This agent accepts the delivery of results through the Columbus communication protocol OTB.</td>
</tr>
<tr>
<td>OTB port</td>
<td>Freely adjustable communication port (default TCP 24786)</td>
</tr>
<tr>
<td>Function</td>
<td>Import into the database or forward to another Columbus server.</td>
</tr>
<tr>
<td>Basedir</td>
<td>Data directory used as storage location for processing scan results.</td>
</tr>
<tr>
<td>Import Time</td>
<td>Time frame during which the delivered scan results can be imported into the Columbus database. (Default: always)</td>
</tr>
<tr>
<td>Default company</td>
<td>Company to which the unknown devices must be registered.</td>
</tr>
</tbody>
</table>

### Forwarding scan results

If the relevant Inventory Collection Agent shall not import the scan results directly into the database but simply collect and forward them, this can be set by the corresponding configuration:

#### Option Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTB server</td>
<td>Target server on which another Inventory Collection Agent is ready to receive.</td>
</tr>
<tr>
<td>OTB port</td>
<td>User-definable port for transfer through the Columbus communication protocol OTB (default 24786)</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>Bandwidth control for the transfer</td>
</tr>
</tbody>
</table>
Forward time | Time frame during which the delivered scan results can be forwarded. (Default: always)

Export to Spider

Columbus Inventory Agent Configuration

**Receiver**
- **OTB port:** 24786
- **Function:** Import results
- **Based on:** Enter/Columbus/InvDate

**Import to Columbus**
- **Import time:**
- **Default company:** MjCompany
- **Send to Spider Data Receiver**:

**Spider Data Receiver**
- **OTB server:** mySpider.boarderco.com
- **OTB port:** 24786
- **Bandwidth:** Unlimited
- **Customer ID:** MyID123489CEE1

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTB server</td>
<td>Target server on which the Spider data receiver is ready to receive.</td>
</tr>
<tr>
<td>OTB port</td>
<td>User-definable port for transfer through the Columbus communication protocol OTB (default 24786)</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>Bandwidth control for the transfer</td>
</tr>
<tr>
<td>CustomerID</td>
<td>Customer ID for the Spider environment</td>
</tr>
</tbody>
</table>
4.2.5 **Configure InventoryScanner**

The easiest way to configure the Columbus Inventory Scan is by using a Client Config Template. The wizard can be displayed by selecting the menu item "Config Template" on the menu ribbon:

Select an existing template or create a new one; then, navigate to the configuration tabs.
## Inventory Common

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded scanner</td>
<td>Activation of the inventory scanner included in the management client.</td>
</tr>
<tr>
<td>Columbus asset data</td>
<td>Creation of the inventory data reserved for Columbus.</td>
</tr>
<tr>
<td>Auto update scan DLL</td>
<td>Automatic update of the additional DLL prepared by Spider, which collects additional data especially for use with Spider license management.</td>
</tr>
<tr>
<td>Random start delay</td>
<td>To avoid that all scanners start at the same time on a virtual system, the scan process is delayed at random within the specified period.</td>
</tr>
<tr>
<td>Offline / FTP / OTB</td>
<td>Information about the communication or the offline operation (e.g. inventory scanner on USB stick)</td>
</tr>
<tr>
<td>Scan interval</td>
<td>Interval control</td>
</tr>
<tr>
<td>Auto update agent</td>
<td>Automatic update of the inventory agent with centralized instance (not for inventory scanner)</td>
</tr>
<tr>
<td>Home path</td>
<td>Target site on which currently unknown computers are to be registered if different from the default on the inventory importer.</td>
</tr>
<tr>
<td>Get config for inventory agent</td>
<td>Creates a configuration file for the inventory agent. This file also contains information from the “Inventory Spider” tab.</td>
</tr>
<tr>
<td>Get config for inventory scanner</td>
<td>Creates a configuration file for the inventory scanner. This file also contains information from the “Inventory Spider” tab.</td>
</tr>
</tbody>
</table>

Note: No additional configuration file must be created for the management client. It is enough to assign the client config template to an organization site by drag & drop or directly to individual computers.
Inventory Spider

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Spider recognition data</td>
<td>Collection of additional data for exclusive use with the Spider asset and license management.</td>
</tr>
<tr>
<td>Drives</td>
<td>Information about local drives that must be scanned. (Default: all local drives, no network drives)</td>
</tr>
<tr>
<td>Extensions</td>
<td>Extensions to be used for the Spider data collection (default: .exe files only)</td>
</tr>
<tr>
<td>Path filter</td>
<td>Directories to be excluded from the scan</td>
</tr>
<tr>
<td>Software metering</td>
<td>Collecting data on the software usage</td>
</tr>
</tbody>
</table>
4.3 Using

4.3.1 Distributing InventoryScanner

In order to be able to add a computer to the inventory and search the hard disk for installed software, the InventoryScanner has to be executed on this computer, start a computer analysis and transfer the results to a server for evaluation.

There are several possibilities to initiate this execution – depending on whether it is a one-time or repeated inventoryization – but also with regard to the possibilities offered by the system.

Typical distribution methods:
- As package via software distribution
- In a login script
- Manual inventorization by means of a memory stick
- Attachment of an E-Mail, which the user executes

Prior to migrations or changeover to a software management system, a one-time scan of the computer is recommended to determine the actual status of the IT landscape. In such environments, there is often no software distribution mechanism. In this case, using a login script is the easiest option, since the manual inventorization - using a memory stick and walking from computer to computer - is very time-consuming, and often not all of the computers are included. However, you can send an E-Mail to certain people containing the instruction to execute the program once. The InventoryScanner may be used completely independent of Columbus, you even do not need a Database Server on the site.

In a managed environment, scanning the computers in regular intervals is essential in order to detect modifications of the hardware or recently installed software. You will need mechanisms for the time-controlled starting of the scanner and you must be able to regularly update the configuration and product definitions.

Note

If the InventoryScanner is executed normally in the user context, the user needs writing rights in the directory used to save the scan result. In the EDC mode, the scanner is always executed when starting and stops after running.

Standalone operation

The InventoryScanner has been designed so it can also be used completely independent from Columbus. For this purpose, the scanner files are required on the Client.

The scanner is started typically from a script, such as the login script, or using a batch file.

4.4 Install the InventoryAgent

We basically recommend to use the Management Client for using inventory data as well as client management functions.

If only inventory data must be collected, ColumbusInventoryAgent.exe will be used. Different scenarios are recommended depending on the customer's environment. The list is not concluding.
4.5 Install Standalone InventoryScanner

For computers on which no Management Client has been installed, the InventoryScanner can be directly installed from the Management Console by using the function "Rollout Inventory Scanner".

Typical distribution methods:
- As package via software distribution
- In a login script
- Manual inventorization by means of a memory stick
- Attachment of an e-mail executed by the user

In order to use this function, the computers must already be entered in the database. These can be manually entered in the management console, imported from the active directory by using LDAP import, imported from a CSV file or registered by PXE.

How to carry out a rollout

- Highlight the desired computer in the Workplace screen and select Rollout > Inventory Scanner from the context menu.

Note

If only Standalone InventoryScanner (without Management Client) is to be installed, the Standalone InventoryScanner must be called separately, e.g. by login script or Registry Run Key. This is not part of the rollout process.

- The available rollout directories are listed in the rollout dialogs. Highlight the desired entry.
- Specify the necessary data for the access to the Windows directory on the computer and the desired options.
- Click Rollout.
- Acknowledge the security message to install the highlighted components on the selected computer.

The Rollout Progress field shows the progress of the rollout process and faults, if present.

If you have selected the Agent based rollout option, then the agent takes care of the distribution in order to connect to computers which are not online at the moment. In this case, the dialog will be closed automatically. On the affected computers, a distribution action is entered on the Scheduled Actions tab.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Versions available for rollout</td>
<td>Versions available for rollout. Please select the desired Client from the list.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> Only clients from version 7.1 contain also the InventoryScanner in the Management Client.</td>
</tr>
</tbody>
</table>
| Remote Admin Share            | Network drive of the Windows directory, e.g. C:\Windows. By default, this directory is shared as ADMIN$.

If no user is specified, the Console establishes a connection with your own Windows user account, under which you are logged in.

If the connection with the specified account cannot be established, the Console will try all accounts entered under **Connecting User** one after another until a connection can be established.

**Domain / User**

Domain and user name with local administrator rights for access to ADMIN$.

**Password**

Password of the specified user for the installation.

**Agent based Rollout**

The rollout can also be transferred to the Columbus Base Agent on the assigned Infrastructure Service. Thus, the distribution will take place in the background and over a longer time period. This minimizes the effort considerably, if certain computers are not turned on.

**Note**

If you are in possession of administration rights on the target system, you do not need to specify a special user. Please ensure, that the administrative network drives (ADMIN$) of your Clients are not disabled by Group Policy settings and therefore not accessible. Please note especially the restrictive Windows default setting.

Before carrying out the rollout you can use the **All Tasks > Check Online Status** function from the context menu to check whether these computers have been turned on. If not, you can either use the **Power On** context menu function to turn on the computers or transfer the rollout to an agent which keeps trying to reach the computers within a time period of one week.
CHAPTER 5

Annex

In this chapter

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5.1 Manage inventory data in the Console

5.1.1 Collecting own inventory data

The easiest but also most costly and error-prone way of collecting inventory data is to enter and update them manually. In addition to the automatic functions for collecting technical data, there is also the option of manually capturing, assigning and managing Asset Data tailored to your requirements in the Console.

- In the Devices or Users window, highlight one or several computers or users.
- Select **Inventory > Edit manual asset data** in the context menu.
This will open the dialog **Edit manual Asset Data**.

![Edit manual Asset Data](image)

Via the context menu, you may configure a data structure to create the data to be collected in clearly laid out way. For this purpose, the commands "Add Item to current tree", "Add Main tree item" and "Remove item" are available.

After you have configured the desired structure, you may select an element and enter the desired value in the Value field. Values collected earlier could also be selected in the dropdown box which reduces the collection work and allows for a more consistent data acquisition.

If a value has been entered for an entry in the structure, this is displayed under the tab "As- set/Parameters" of the corresponding computer or user. Structure entries without assigned value are not shown in this list. All entered values - like the automatically supplied ones - are available for evaluations, as e.g.reporting or export.

**Note** These data cannot be exported to Spider.

### 5.1.2 Re-Deliver /Delete & Re-Deliver Inventory

Use the **Re-Deliver Inventory** function to re-create the inventory of highlighted computers or users and enter it into the database, independent of scan intervals (daily, weekly, etc.).

- In the Devices or Users window, highlight one or several computers or users.
- Select **All Tasks > Inventory > Re-Deliver Inventory** in the context menu to force a re-delivery.
  - or -
  **Delete & Re-Deliver Inventory**, to delete all existing inventory entries and force a re-delivery.
- Confirm the security message with **OK**.

The **Delete & Re-Deliver Inventory** function deletes all entries, also the manually entered asset data; after that, a new query is started for the inventory data of the highlighted computers/users. This function is useful, if e.g. there have been modifications in the structure of the inventory data and you want to get rid of all old entries.

**Note** Both functions require that the Management Client runs on the computer in order to find new inventory values. This can be forced in the context menu with "Process SW Update" (CTRL+S).
However, this only works for the inventory data delivered by the Management Client; the inventory data determined by the InventoryScanner remain unchanged.

### 5.1.3 Push inventory data

The function *Push Enhanced Inventory Processing* enables to initiate an inventory scan, even if the set time cycle for an inventory scan has not been reached on the client side. This causes the inventory data to be updated as fast as possible provided that the computer is online.

- Highlight one or more computer(s) in the Devices window.
- Select *Push Enhanced Inventory Processing* in the context menu to force a re-delivery.

Alternatively, a remote inventory can also be requested over the WMI technology.

- Highlight one or more computer(s) in the Devices window.
- Select *Remote Inventory* in the context menu to force a re-delivery.
5.2 Additional inventory values for Spider

The computer can collect additional values for Spider. The following scenario is supported by all active inventory components.

In order to prepare further values for Spider, data can be written in the registry of the computer for which the data are to be collected. These values are automatically collected on the next active scan.

Path in the registry:

```
HKLM\Software32bit\Brainware\Columbus\7\ExternalInventoryData
```

REG_SZ, REG_DWORD and REG_QWORD are supported.

Example:

![itm2go Domain Information]

These three values will be transferred through Columbus to Spider (if a Spider system is connected).

**Note**

Columbus does not check or import these values into the Columbus database.
5.3 Installer for the Standalone InventoryScanner

The Columbus InventoryScanner installer provides a pre-configured installation of the Standalone InventoryScanner. This can then be used to install the InventoryScanner.

5.3.1 Configuration

File storage

In the installation directory of the Infrastructure Service you will find the files required for creating the setup under the directory \Setup\ClientGenerator.

<table>
<thead>
<tr>
<th>Folder / File</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>\NSISUnicode246</td>
<td>NSIS (Nullsoft Scriptable Install System) is a professional Open Source application to establish Windows Installer. All NSIS parts required to create a setup are found in this folder.</td>
</tr>
<tr>
<td>\Source\InventoryScanner</td>
<td>The source files for the Standalone InventoryScanner of this directory are updated every time that the Infrastructure Service is updated.</td>
</tr>
<tr>
<td>C7_Columbus_InventoryScanner_Setup_Unicode.bat</td>
<td>Batch file to initiate the build process of the installer.</td>
</tr>
<tr>
<td>C7_Columbus_InventoryScanner_Setup_Unicode.log</td>
<td>Log file of the build process</td>
</tr>
<tr>
<td>C7_Columbus_InventoryScanner_Setup_Unicode.nsi</td>
<td>Control file used by NSIS to create the Management Client installer</td>
</tr>
<tr>
<td>Columbus Inventory Scanner 7.3.0.exe</td>
<td>Complete installation file</td>
</tr>
</tbody>
</table>

Creating the setup

The setup is started by calling the file "C7_Columbus_InventoryScanner_Setup_Unicode.bat". After the setup has been processed, the file "Columbus Inventory Scanner 7.x.x.exe" is created.
5.3.2 Installation on target devices

Note Administrator rights are required for installation.

Manual installation

Setup can be normally started by double clicking the Columbus Inventory Scanner 7.3.x file. The following dialogs are made available:

Selection of the installation language

Welcome dialog
Specification of the installation path for scanner installation

![Columbus Inventory Scanner Setup](image)

Selection of components

<table>
<thead>
<tr>
<th>Installation options</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbus Inventory Scanner</td>
<td>Scanner installation</td>
</tr>
<tr>
<td>HKLM Run Key</td>
<td>In the tab under HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Run, an entry is created that starts the scanner. For each logged-in user, the scanner 1 of the Hive Wow6432Node is enabled only on 64-bit machines and is the storage location for 32-bit programs.</td>
</tr>
<tr>
<td>HKCU Run Key</td>
<td>In the tab under HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Run, an entry is created that starts the scanner for exactly this logged-in user. For other users that log-in in the machine, the scanner is not started.</td>
</tr>
<tr>
<td>Task Scheduler</td>
<td>In the task scheduler of the machine, an entry is created than runs the scanner daily at 01:00. Further parameters can be set during the silent installation for the extended configuration of the task scheduler. The method is recommended to scan servers, since nobody must log-in in the machine in this case.</td>
</tr>
<tr>
<td>Machine Autostart Folder</td>
<td>Creates a shortcut to the scanner in the autostart folder of the machine. When a user logs-in, the scanner is run.</td>
</tr>
<tr>
<td>User Autostart Folder</td>
<td>Creates a shortcut to the scanner in the autostart folder of the user logged-in during installation. For other users that log-in in the machine, the scanner is not run.</td>
</tr>
</tbody>
</table>

**Note** The creation of tasks is not supported under Windows XP!

**Note** When "HKCU Run Key" and "User Autostart Folder" are used, observe that the scanner will only be run for the user that was logged-in in the machine when the scanner was being installed.
Therefore, we recommend to use the methods "HKLM Run Key", "Task Scheduler" and "Machine Autostart Folder" only.

**Note**
After the installation, the scanner can be immediately started by ticking the "Run Columbus Inventory Scanner" option.

**Automated installation (silent)**
When "Columbus Inventory Scanner 7.x.x.exe" is called with parameter "/S", the setup is installed in the silent mode without dialogs.

**Note**
Upper and lower case is important when using the parameter /S. Please use an upper case «S». 
5.3.3  **De-installation**

**Manual de-installation**

The manual de-installation can be initiated from the control panel.

![De-installation from the control panel](image1)

**Automated de-installation (silent)**

The file “C7_Inventory_Scanner_Uninstaller.exe.” is located in the installation directory of the inventory scanner.

![Automated de-installation](image2)
Uninstaller

This file can be opened with the parameter "/S" to execute automatic de-installation.

Silent de-installation

Note When the parameter /S is used, upper and lower case is important. Please use an upper case S.