

# **Columbus OSDeploy**

**User Manual** 

**Product version 7.6** 

# columbus

Issue: 12.18

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Document titel	Columbus OSDeploy - User Manual
Product version	7.6
Production and printing	Brainware Consulting & Development AG Sumpfstrasse 15 CH-6300 Zug
Release date	12.12.2018

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# General

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Thank you very much for choosing brainwaregroup and Columbus.

Columbus and Spider provide you with powerful tools for software and lifecycle management.

This manual will support you in using the manifold possibilities of Columbus in the best possible way for your company.

## 0.1 Supplementary documents

Please refer to the following manuals for additional information about Columbus OSDeploy:

- **Basics** Introduction in Columbus and description of the basic functions which are applicable for all modules.
- Columbus Technical Reference

Description of the script commands and variables as well as an overview of the Management Console configuration parameters (available in English language only).

# 0.2 Typographical conventions

Format	Description	
Bold font	Elements in the software or in the operating system, such as menu items, buttons or elements of a selection list	
Italic font	Emphases (important details) and links to other chapters or documents	
Triangle symbol "≻"	Instruction step	
Angle bracket ">"	Command menu sequences, e.g. <b>File &gt; Open</b>	
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.	

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.

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).

## 0.3 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

I 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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# 0.4 Abbreviations

For a better understanding the abbreviations in this section are given in full text.

- **CMC** Management Console
- **PXE P**reboot Execution Environment

# 0.5 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 inventorization 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.

ImportantIf the number of managed assets increases, the customer shall bind himself/herself to obtain a<br/>new license for the additional ones within 30 days. The Betriebssysteme can restrict or stop<br/>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 Betriebssysteme including all hot fixes within one year from the invoice date.

#### CHAPTER 1

# **Product Description**

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Columbus OSDeploy ensures the automated installation of operating systems including configuration.

The following operating systems are supported.

- Windows XP, Windows Vista, Windows 7, Windows 8/8.1, Windows 10, 32 bit and 64 bit versions \*
- Windows Server 2003, Server 2003R2, Server 2008, Server 2008R2, Server 2012 R2, 32-bit and 64-bit versions \*
- VMware ESX, VMware ESXi, Citrix XEN Server \*\*

(\*) Windows 2000 is no longer supported from Columbus 7.0.

(\*) Windows XP, 2003 and Vista, as well as Server 2008 are provided as Legacy Windows Deploy. For more information, see the annex.

(\*\*) Further Linux distributions under way – please ask your helpdesk in case of special requirements.

This includes:

- Installation of the operating system
- Hardware configuration (drivers, settings, security)
- Network configuration (name, domain membership)
- Miscellaneous information such as registry, files, assignment to a software distribution, etc.

### **1.1** Installation of Windows

Columbus OSDeploy distinguishes between Legacy Deploy and Smart Deploy.

**Legacy Deploy** (All Windows) works with the unattended (setup-based) installation technology of Microsoft and extends it using the so-called *Jobs*. These allow for the automatization of the individual configuration and integration of the installed clients and/or server.

**Smart Deploy** (from Windows Vista, Server 2008) works with an image-based (Microsoft WIM) technology and enables dynamic installations, as well as the creation and use of own images in order to accelerate the rollout process by software already contained in the image.

The installation is done using Windows PE as boot medium which can be loaded by various media:

- PXE (Preboot Execution Environment, incl. F12 Network boot)
- Bootable CD-ROM, DVD
- Local hard disk
- Removable Drives (e.g. USB sticks, portable hard disk)

# **1.2** Linux installation

Columbus OSDeploy allows for the installation of several Linux versions similar to the installation of Windows causing not too much learning effort.

Since in the Linux environment, there are a number of slightly different platforms, we will release the platforms with Columbus phase by phase if required and describe the peculiarities in related knowledgebase articles.

The following documentation refers to the support of VMware ESX / ESXi.

The installation of VMware ESX/ESXi is carried out using a SysLinux Kernel for the start. It can be started via Columbus PXE.

#### CHAPTER 2

# Configuration

### In this chapter

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Assigning Preboot Services Agent	20
Configure Preboot Services Agent	20

This section describes the necessary configuration steps to operate OSDeploy. The configuration consists of the following steps:

- Understand the functional principle (see "Function" on page 13)
- Activate and assign OS Deployment Agent
- Configure OS Deployment Agent (on page 15)
- Provide OS releases (see "Indexing OS depot data" on page 17)

# 2.1 Function

The function of the OSDeploy module is based on the following functioning principle:

- Configuration of an OS Deployment Agent which imports OS-Releases from a defined network share and stores their characteristics in the database. 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. For the installation of Linux-based OS, no network share but an internal FTP server is used.
- Setting up the OS-Releases within the OS Share (operating systems, selected standard configurations etc.).
- Configuration of the Preboot Services (PXE) agents to be used which will later allow the computers the network boot for installing operating systems.
- OS installation orders may then be initiated at the console for any computer. Clients will execute them during a restart and install the desired operating system via network boot.

# 2.2 Managing OS Deployment Agent

Every Agent on a Infrastructure Service must be assigned to a company from which it will be managed (the authorized users of that company can later on manage this Agent).

How to assign an agent management

Navigate to the Infrastructure screen in the console and highlight the Infrastructure Service.

I The list below shows all agents which are available on this server.

Highlight the OS deployment agent.

I The menu ribbon shows all available functions.

Select the Assign item in the menu ribbon and select the company by which the agent shall be managed:

System Devices Us	ers Security Organisation Reporting Tools	Infrastructure	Columbus 7 N	Management Console
Uplink Assign Activat	e Deactivate Update Share Logfile H	elp Configure Locations	Schedule Logfile	Create OS-Release Maintenance
	General	OS-Deplo	oyment 🕞	Smart Deploy
Assign Infrastructure	To Company			
Please select m Please note tha servers. Server to mana Name Function	withe company which will be using the in t each company in your Columbus system ge: bwgdemo\server-2012:x64 OS Deployment	<b>Y</b> nich will use this Infras rastructure server listed be requires its own infrastructu	structure Server	
Select the comp	pany:			
Company	brainwaregroup	~		
		ОК	Cancel	)

## 2.3 Activating OS Deployment Agent

The Agent can only be used if it was previously 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 configuration from the database and starts working.

#### How to activate the agent

- Navigate to the Infrastructure screen in the <CMC\_C> and highlight the Infrastructure Service.
  - I The list below shows all agents which are available on this server.
- Highlight OS Deployment Agent.

I The menu ribbon shows all available functions.

Select the *Activate* item in the menu ribbon:



# 2.4 Assigning OS Deployment Agent

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

Navigate to the Infrastructure screen in the <CMC\_C> and highlight the Infrastructure Service.

I The list below shows all agents which are available on this server.

- Highlight OS Deployment 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.

# 2.5 Configure OS Deployment Agent

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 **Configure** button in the menu ribbon.

C   C   P C C   System Devices Users Security Organisation Reporting Too	ls Infrastructure	Co	olumbus 7 N	/lanagement Console	
Uplink Assign Activate Deactivate Update Share Logfile	Pelp Configure	Locations Schedule	Logfile	Create OS-Release Smart Depl	Maintenance
Define OS Source Location				7	
Bestive the location of the OSD relevance (e.g. Warners)	figuratior	I g sources may be	found.		
Source (\srv-demo.bwgdemo.corp\columbus\osdepot		eporj	<b>1</b>		
If the OSDeploy sources area is on the local device (srv-demo) or if the same account can locally log on (on srv-demo) and also access the OSDeploy sources (\\srv-demo.bwgdemo.corp\columbus\osdepot) then enter the account here.	Access Param Domain User Password	eters (impersonation)			
Use the same account to access the network					
Normally you can use the same account for impersonation and network access. In special environments e.g. with a Novell Netware server you are required to perform the impersonation with a local (NT) account and to access the network under a different (NDS) account. In this case uncheck the checkbox and specify the network account.	Access Param Domain User Password only)	eters (net access) bwgdemo.corp columbus [leave unchanged]			
		ОК	ancel	]	

Field	Description
Source	UNC path to the OS depot data.
Access parameters (impersonation)	If the data are on the same server as the agent, fill in this information. Otherwise, leave it empty and fill in the net access information.
Use the same	If the OS depot data are on the same server as the agent, the infor- mation can also be used for network access.
Access parameters (net access)	We recommend entering a user that has access to the OS depot data through the network. This setting can also be used when data are on the same server on which the agent is running.
[]Get log files	For Windows Smart Deploy, information regarding the deployment pro- cess are stored in the OS depot under the directory _Debug.

Activate the function for log files only if these are required. Otherwise, complete log files are stored by every machine at each Smart Deployment process.

### 2.5.1 FTP for Linux installation

Unlike Windows, Linux installations are not managed via a network share but via an internal FTP access. This FTP access is used for the source files and for feedback about the installation progress on the client side.

You can find the integrated FTP server in the configuration of the base agent.

- > Activate the FTP Access tab and enter the required data.
- > Navigate to the next tab or click **OK** to complete the configuration.

Columbus Base Agent
Columbus Base Agent Settings     Configure the settings needed by the columbus base agent
Infrastructure guardian Rollout / Update Wake-on-LAN Status Delivery FTP Access
FTP client access Own FTP server
FTP Server SRV-DEMO.bwgdemo.corp
Now specify the account to access the above FTP server from any other device for read and write access.
Access Parameters
User Columbus
Password [leave unchanged]
OK Cancel

#### 2.5.2 Transfer status for Linux installation

By default, feedback about the installation progress on the client side is disabled. If feedback is enabled and if the Hostname box is empty, the Client will look for the next Infrastructure Service to transmit the installation progress data to the Columbus Database. The feedback from the Client during the installation process can also be diverted via a fixed Site Server or directly to a Infrastructure Service. If this is preferred, enter the server name and port.

- > Activate the **Status Delivery** tab and enter the desired modifications.
- > Click on **Close** to complete the configuration.

Columbus Base Agent	
P Help	mbus Base Agent Settings
Infrastructure guardian Rollout / Update	Wake-on-LAN Status Delivery FTP Access
Client status delivery Specify the host name and port where clie	ents should deliver their status.
Host Name SRV-DEMO.bwgdemo	).corp
Port 24787	
✓ Activate Status receiver on port	24787
	OK Cancel
Field	Description
Host Name	Name of the server
Port	Server port for client feedback
Activate Status receiver on	Server port for server feedback

### 2.6 Indexing OS depot data

Each time after changing the files in a OS-Release (e.g. new contents of a DVD or new jobs), the relevant Agent must execute an indexing process. In doing so, the depot directory will be scanned and reloaded, and all changes are adopted in the database. Only then will the changes be available for a distribution.

Smart Deploy

#### 2.6.1 Execute indexing now

- > Highlight OS Deployment Agent on the Infrastructure screen.
- > Select the **Schedule** function in the menu ribbon.



OS-D

> Select *Process now* to carry out an indexation within the next minutes.

Refresh OS Depot Index List	×
Refresh OS Depot Index List Define when to run the refreshing of the Index List	
The following action(s) <osrefresh> will be scheduled for 1 object(s)</osrefresh>	
Process now	
ОК	Close

#### 2.6.2 Schedule indexing for later

- > Highlight OS Deployment Agent on the Infrastructure screen.
- > Select the **Schedule** function in the menu ribbon.

C   E T & O   System Devices Lisers Security Organisation Reporting Tools Info	Columbus 7 Management Console
Uplink Assign Activate Deactivate Update Share Logfile Help	Configure Locations Schedule Logfile Create OS-Release Maintenance
General	OS-Deployment 😰 Smart Deploy 🕼

Select Schedule processing to schedule an indexing process. Set the following to carry out an indexing process every morning at 4:00 am:

C Refresh OS Depot Index List	×
Refresh OS Depot Index List	
The following action(s) <osrefresh> will be scheduled for 1 object(s)</osrefresh>	
Process now Schedule processing          Image: Constraint of the second secon	
✓ Repeat action Interval       Image: Second s	
ОК СК	ose

#### 2.6.3 Manage indexing

- > Highlight OS Deployment Agent on the Infrastructure screen.
- Switch to the register Scheduled Actions.
   I Each planned action is included in the list.

Object	Description
Responsible Server	Name of the Infrastructure Service on which the Agent is installed.
Action	The action to be executed (in this example: <i>osrefresh</i> )
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.

# 2.7 Managing Preboot Services Agent

Every Agent on a Infrastructure Service must be assigned to a company from which it will be managed (the authorized users of that company can later on manage this Agent).

#### How to assign an agent management

Navigate to the Infrastructure screen in the <CMC\_C> and highlight the Infrastructure Service.

I The list below shows all agents which are available on this server.

Highlight Preboot Services Agent.

I The menu ribbon shows all available functions.

Select the Assign item in the menu ribbon and select the company by which the Agent shall be managed:

Note

For details and pictures, see the chapter for OS Deployment Agent.

## 2.8 Activate Preboot Services Agent

The Agent can only be used if it was previously 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 configuration from the database and starts working.

#### How to activate the agent

Navigate to the Infrastructure screen in the <CMC\_C> and highlight the Infrastructure Service.

I The list below shows all agents which are available on this server.

- Highlight Preboot Services Agent.
  - I The menu ribbon shows all available functions.
- > Select the *Activate* item in the menu ribbon.

**Note** For details and pictures, see the chapter for OS Deployment Agent.

### 2.9 Assigning Preboot Services Agent

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

Navigate to the Infrastructure screen in the <CMC\_C> and highlight the Infrastructure Service.

I The list below shows all agents which are available on this server.

- Highlight Preboot Services 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.

**Note** For details and pictures, see the chapter for OS Deployment Agent.

### 2.10 Configure Preboot Services Agent

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

#### How to configure the agent

- > Highlight the Agent on the Infrastructure screen.
- > Click the **Configure** button in the menu ribbon.



**Note** When the configuration is started for the first time, you will be asked about the purpose of the Preboot Services Agent. Select *Production Environment*.

Configure Preboot Se	rvices Agent			
	Preboot service	es agent configu E session settings and P	uration XE Rules	
OTB-Host during Winde				Port:
[default]			~	24784
Keyboard layout during	Windows PE session			
English - United State	s - ''0409:00000409''		~	
Device registration path	1			
			$\sim$	
Include/exclude Mac-A	ddresses			
Command	MAC Address or Time Interval	Comment		
IncludeDevice	· · · · · · · · · · · · · · · · · · ·			

Object	Description
OTB-Host during PE	Usually, during a Windows PE session, Columbus uses the server name of the PXE ( <i>Preboot Services</i> ) Agent for communication. If there are several servers in the Columbus infrastructure, an alter- native server can be specified.
OTB-Port during PE	TCP port for OTB communication. Usually, this is 24784.
Keyboard	A keyboard layout can be selected for keyboard entries during a Windows PE session.
Device registration path	Box for selecting the company in which new computers registered by a PXE-boot (e.g. by pressing F12 after BIOS / UEFI process) shall be assigned to the Agent. This field is only filled if several compa- nies are available.
Include / Exclude MAC	Individual MAC addresses or ranges can be either permitted or pro- hibited for the use by PXE in this list. Additionally, time frames dur- ing which the PXE agent must not carry out any action can be de- fined. (New rules can be created in the context menu of the list).

Note

Do not remove the first rule *IncludeDevice* \*, otherwise no PXE requests will be answered.

#### CHAPTER 3

# **Windows Smart Deploy**

### In this chapter

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Create OS release	24
Create / edit OS templates	24
Assign OS release	
Create own Windows images	
Using your own Windows images	
Distributed infrastructures	
Smart Deploy management	

## 3.1 Description

Columbus Smart Deploy allows for providing and installing Windows operating systems (from Windows Vista, Server 2008) in a few steps. You can create and use your own Windows images to accelerate the installation processes.

Columbus Smart Deploy is suited both for mass operations as well as for individual installations, and it offers clear procedures for scenarios with distributed infrastructures and different clients.

### 3.2 Data storage

All files required for a Smart Deploy OS release are stored in the data path of the OS Deployment Agent.

File	Home	Share	View	Searc	:h	
$\leftarrow \  \   \rightarrow$	× ↑ [	D:\Colu	mbus\OSDep	ot		
Name		^			Date modified	Туре
def	aults				22.12.2015 11:19	File folder File folder
F518	E260-922A	-448D-B8C	C-5C5A44FB	1C6D	23.12.2015 08:56	File folder

Object	Description
_defaults	Default values used when creating an OS release.
_jobstore	Storage of jobs that are always used when installing an OS release (mandatory) and jobs provided as option when creating an OS release (common).
%GUID%	An unambiguous GUID is assigned to each OS release. This GUID is unique and allows for the identification even of scenarios with distributed structure.

#### 3.2.1 \_defaults

The default values used when creating a new OS release are stored in the directory %OSDepot%\\_defaults\windows\common.

Object	Description
default.json	Default values that are written in the template <i>Default</i> when creating an OS release.
default.json.template	Used as example of how templates can be read as a file into an existing OS release, also subsequently.
unattend.xml	Default response file used for the template <i>Default</i> .

Manual changes on these files can cause unexpected outcomes.

### 3.2.2 \_jobstore

Jobs that are copied into a new OS release when it is being created are stored in the directory %OSDepot%\\_jobstore\windows\common. These jobs can later be activated or deactivated in the templates and also in individual configurations.

Note	Enhance the storage with frequently used jobs.		
	Jobs that will always be executed during use (installation of a computer) are stored in the di- rectory <i>%OSDepot%\_jobstore\windows\mandatory</i> . These jobs cannot be activated or deac- tivated later in the templates nor in individual configurations.		
Note	The jobs in _jobstore are automatically updated through Columbus Setup. This ensures, e.g. that mandatory jobs are always up-to-date when applying an OS release.		

Important Manual changes on these files can cause unexpected outcomes.

#### 3.2.3 %GUID%

Persistent data used when applying an OS release are stored in the directory %OSDepot%\%GUID%.

Object	Description
dof	This storage contains jobs that can be activated or deactivated within a template or in an individual configuration.
OS	Storage for the Windows installation files. This is a 1:1 copy of the installation medium (e.g. of the DVD or the mounted .iso file).
WIM	The self-created images of a Windows installation are stored in this directory.
default.json_imported	The values from this file were used for creating the <i>Default</i> tem- plate.
release.json	This file was used for the initial indexing of an OS release and will not be read in again.
unattend.xml	Default response file used for the initial creation of the <i>Default</i> template. This file will no longer be required.

R.

# 3.3 Create OS release

> Highlight the OS deployment agent on the Infrastructure screen.

Highlig	nt the OS deployment agent of	n the In	Trastructure	screer	1.
<ul> <li>C   2 i 2 /</li> </ul>		Columbus 7 Management Console			Management Console
System Device	s Users Security Organisation Reporting Tools Infi	rastructure			
Uplink Assign	Activate Deactivate Update Share Logfile	Configure	Locations Schedule	Logfile	Create OS-Release Maintena
	General		OS-Deployment	5	Smart Deploy
C OS Release				×	
	Create OS-Releas	e			
	Create a new OS release	to be used	d by Smart Deploy	· _	
Platform	Windows 🗸				
Description	My Windows 10 - x86				

Source	Z:\\ Browse
	Auto index to DB after operation
	Save Cancel

Provide information regarding the name of the OS release and the storage location of the source files:

Field	Description	Default value
Platform	Target platform (current except Mi- crosoft Windows)	Windows (cannot be modified)
Description	Name of the OS release	Freely adjustable
Source	Source directory (e.g. DVD)	Adjustable using the browser
Auto index to DB	After creation, executes an indexing process of the OS depot.	Activated

Once the OS release has been created, the indexing process of the OS depot is started within the next minute, after which the OS release is ready for installation.

# 3.4 Create / edit OS templates

- > Highlight OS Deployment Agent on the Infrastructure screen.
- Navigate in the Smart Deploy tab and select an OS-Release or an OS template. Click the right mouse button on the *Template name* column to display the context menu. Then, select *Edit OS-Template* or *Create OS-Template*.

Tilter: OS Release	~			
OS Release	Tem	olate name	Platform	Last Change
My Windows 10 - x86	Defa	ult Create 0 Edit OS-1 Delete 0	5-Template emplate 5-Template	22 12 2015

Tip: An OS template can also be opened for editing by double-clicking it.

### 3.4.1 Data of the OS template

General
OS-Release
My Windows 10 - x86
OS-Template
Default
✓ Set as default template
Export Template
Creation
23.12.2015 08:56:57
Last change
23.12.2015 08:56:57
Unattend.XML available
Import Export

Field	Description
OS-Release	Affiliation to a specific OS-Release
OS template	Name of the OS template
[] Set as default	Use this template as default. Every new OS template that is created is based on this template. If the related OS-Release without individual con- figuration is assigned to a computer, the data is obtained from this tem- plate. Only one <i>Default</i> OS template is permitted for each OS-Release.
Export Template	The contents of this OS template can be exported as .json file.
Creation	When was this OS template created.
Last Change	When was this OS template last edited.
Unattend.XML	Indication whether there is an unattend.xml file in the database for this OS template.
Import / Export	The unattend.XML file to be used for this OS template can be imported or exported.

### 3.4.2

General
---------

General Network Hardv	vare Install Source Jobs	
Registration Information		
Registered User	brainwaregroup	
Registered Company	brainwaregroup	
Region / Location		
Keyboard	German - Switzerland	$\sim$
System Locale	German (Switzerland)	$\sim$
User Locale	German (Switzerland)	$\sim$
Timezone	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna	$\sim$
Local Administrator		
Password	••••••••	
Confirm password	••••••	

Field	Description
Registered User	Is displayed on the Windows properties.
Registered Company	Is displayed on the Windows properties.
Keyboard	Default keyboard setting (e.g. at log-in).
System Locale	Default settings for non-unicode applications
User Locale	Date and time display, currency, numerical settings
Timezone	Time zone
Password	The local administrator password after installation.

### 3.4.3 Network

General	Network	Hardware	Install Source	Jobs	
Domain /	/ Workgro	up			
Workgr	oup	O WORKGF	ROUP		~
				Create entry	E dit entry
					Remove entry
Domain		bwgdemo.	.corp		~
				Create entry	E dit entry
					Remove entry

Field	Description
Workgroup	Information about joining a workgroup

Domain	Information about joining a domain
Create entry	Create a new workgroup / domain affiliation.
Edit entry	Edit a workgroup / domain affiliation.
Remove entry	Delete a workgroup / domain affiliation.

The color coding determines whether the workgroup or the domain is joined.

### 3.4.4 Network - Domain Layout

A layout can be edited using Create or Edit:

🧲 Domain Layout	X
	Domain Layout Domain configuration settings
Layout name	Domain Member from Berne
Domain (FQDN)	bwgdemo.corp
User	Columbus
Password	••••••
	Connect
Browse	• • • • • • • • • • • • • • • • • • •
	Ok Cancel

Field	Description
Layout name	Name of the domain layout
Domain	Full name of the required domain
User	User account for domain access.
Password	User account password for domain access.
Connect	Establish a connection to the active directory of these domains.
Browse	Selection of the organizational unit (OU) into which the computer is to be incorporated. In order to incorporate the computer into the standard OU (usually computers), select the top entry (the actual domain name).
The user account u access t	sed to access the domains is used during the installation of Windows to he domain and requires for this purpose authorizations in the Active Direc-

tory.

### 3.4.5 Hardware

Display		
Resolution	AUTO DETECT	· ·
Color	True Color (32-bit)	~
Refresh	60 Hertz	~
Partitioning Layout	FULL DISK	~
	Create	Edit
		Remove

Field	Description
Resolution	Defined resolution of the monitor display. (Select AUTO DETECT for the opti- mum resolution provided by Windows)
Color	Color depth
Refresh	Refresh rate of the monitor
Layout	Information about the partitions of the first hard disk
Create entry	Create a partition layout.
Edit entry	Modify a partition layout.
Remove entry	Delete a partition layout.
Mode	Partition mode:
	Reset full disk - The full first hard disk is completely repartitioned.
	Reset only 1st partition - Only the first partition is rewritten.

### 3.4.6 Hardware - Partition Layout

A layout can be edit	ted using Create or Edit:
----------------------	---------------------------

C Partition Layo	put	-		×
	Partition Layout Partition layout configu	t ration		
Layout Name	My common layout			
Size based	<ul> <li>Fixed</li> <li>Fixed</li> <li>Estimated disk</li> </ul>	: space (GB)		
Partition 1	33%	🗖 Max. f	ree space	
Partition 2		<b>⊽</b> Max. f	ree space	1
Partition 3	ų 0%	🗖 Max. f	ree space	
		Ok	Cano	el

Field	Description
Layout Name	Name of the layout
Size based Fixed	Create a layout with fixed specifications (e.g. first partition 100GB, the rest for partition 2).
Size based Fixed	Create a layout with variable specifications (e.g. first partition 33%, the rest for partition 2).

### 3.4.7 Install Source

Source name	Windows 10 Enterprise	~
.ast change	10.07.2015 12:01:23	
Architecture	x86	
/ersion	10.0.10240	
anguage	en-US	
ensing		
nstall key		

Field	Description
Source name	If the Windows image (install.wim) contains several different editions, the required one can be selected. This list includes the own preconfig- ured images. The name is always the name entered during creation. (See chapter "Create own Windows images").
Last change	Last change on the selected image.
Architecture	Architecture of the Windows image (used for selecting Windows PE).
Version	Windows version in the image.
Language	If the image is available in different languages, the default language can be selected.
Install key	Specification of the license key for installation.

#### 3.4.8 Jobs

Gen	eral Network Hardware Install Source Jobs
Cus	tomized Jobs
	Description A
<ul> <li>Image: A start of the start of</li></ul>	Change CD Driveletter to Z:
	Disable - Auto Activation Process (x86/x64)
	Disable User Access Control (UAC)
<b>v</b>	Enable RemoteRegistry Service (Autostart)

Selection of the optional jobs provided for the specific OS release.

# 3.5 Assign OS release

### 3.5.1 Single operation

Select a computer from the list of devices and navigate in the OS or Smart Deploy tab:

Dashboard	OS Software Inventory Security Patches	Do
Smart Depl	loy Legacy Deploy	
Release	Windows 10 - x86	~
Template	Default	$\sim$
	Use Template values	
	Clear Configure Schedule	•
🔊 OS Inst	all is scheduled	

	Field	Description		
	Release	Selection of an OS-Release.		
	Template	Selection of an OS template.		
	[] Use defaults	Used to overwrite individual configuration settings with the data of the OS template.		
	Clear	Remove the assignment of OS-Release and OS template from this com- puter. Check or customize the configuration included in the template. Schedule the installation (Columbus supports Wake-On-Lan).		
	Configure			
	Schedule			
Text Indicates if a Windows installatio		Indicates if a Windows installation is already scheduled.		
Note	If the checkbox <i>Use Template values</i> has been set and the data of the selected template is edited, the next time that Windows is installed the computer automatically takes the data from the edited OS template.			
Important	The Windows cont the description ab	The Windows configuration can be customized using <i>Configure</i> . The possibilities are based on the description about editing an OS template (see the corresponding chapter).		

### 3.5.2 Mass operation

Select a computer from the list of devices and click the right mouse button to select the following actions in the context menu:

	Custom Tasks	۲	•		
<b></b>	Push Processing Ctrl+S				
	New Device Ins				
	Clone Device Ctrl+C				
80	Delete Device Del				
	Maintenance	۲			
	Operation			Activation	۲
	Inventory	۲	R	Device Class	۲
	Remove & Reset	۲		Rollout	×
	Others	۲		Assign smart OS	
	List Operations	۲		Deploy smart OS	
Ū	Device Properties F2			Deploy legacy OS	

Field	Description
Assign smart OS	Selection of an OS-Release and an OS template. The time of installation can also be selected on the same step.
Deploy smart OS	If the selected computers have been provided with a <i>Smart Deploy</i> OS-Release, the time for a reinstallation can be scheduled.
Deploy legacy OS	If the selected computers have been provided with a <i>Legacy Deploy</i> OS-Release, the time for a reinstallation can be scheduled.

## 3.6 Create own Windows images

In order to accelerate the installation process, you can create your own Windows installation images and use them in *Smart Deploy*.

Install a computer with a Smart Deploy OS-Release and fill it in with the required software and security patches from Microsoft and third-party suppliers (for this purpose, we recommend to use the *Columbus UpdateManagement*).

When the computer installation has been completed, log in using a local administrator account.

On the *Columbus Infrastructure Server* you will find the tool *PrepareCaptureAction.exe* in the Tools directory of the Columbus installation. Copy an instance on the prepared computer.



Start PrepareCaptureAction.exe on the prepared computer.

os Columbus - C	-		×		
Capture an OS-Installation					
Туре	<ul> <li>Image</li> <li>Plain OS Image</li> </ul>				
Image Name	My own Windows image				
Progress	0%				
Status					
	<u>Capture</u>		C <u>l</u> ose		

The Smart Capture tool establishes a connection to the next Columbus infrastructure (based on the connection data of the locally installed Columbus Management Client) and checks whether a Smart Deploy OS-Release has been assigned to the prepared computer.

After that, two modes are available:

#### Plain image

When images are created using this mode, all the information of Columbus is deleted. Then, the image can be used in the same way as one supplied by the manufacturer.

#### Smart image

When images are created using this mode, the information regarding already assigned SW packages or other important data remain unchanged. This ensures that a newly installed computer with corresponding Columbus Management Client do not reinstall already installed

SW packages. Additionally, the user adjustments for each SW package are carried out automatically.

#### **Command line parameters**

PrepareCaptureAction.exe can also be run from the command line.

The following syntax with the corresponding options is available.

PrepareCaptureActions.exe /capture [/smart | /plain]

#### /capture

This option is mandatory and starts the capturing.

#### /smart

This option defines that a smart image is to be created.

#### /plain

This option defines that a plain image is to be created.

Note:	Using the command-line, the name of the image will be auto generated as follows: 'Image from <date> <time>'. (e.g., 'Image from 14.09.2017 16:34:33')</time></date>

After completing the SysPrep process, restart the computer and boot the PXE. A Columbus image wizard is started, which creates a image and stores it in the selected Smart Deploy OS-Release.

As soon as the image is completed, execute an indexing process of the *OS Deployment Agents*. The image is then ready for use.

Important	The computer on which the Smart Capture tool was executed can no longer be used. It must
	be reinstalled.

#### **3.6.1 Resetting the Windows activation**

If Windows is installed using a ProductKey for a single license, you have 30 days time to activate this Windows installation. If Windows is not activated within this 30-day period and the activation countdown is not reset, Windows switches to the reduced functionality mode (RFM). In this mode, users can only log in on the computer after Windows has been activated.

A Windows installation can be prepared with *PrepareCaptureAction.exe* for creating your own images as many times as required. Every time that a new image is prepared with *PrepareCaptureAction.exe*, the activation status is reset to zero.

ImportantAfter PrepareCaptureAction.exe has been executed three times (eight times in case of Windows<br/>8 or higher), the activation status is no longer reset. Instead, after installing the image, an im-<br/>mediate activation is required.

When the computer installation is made using a valid ProductKey, activation occurs automatically. For further information:

https://technet.microsoft.com/en-US/library/hh825195.aspx

The activation status reset can be inhibited by setting the following BEFORE executing *PrepareCaptureAction.exe* in the local registry of the prepared computer:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows
NT\CurrentVersion\SoftwareProtectionPlatform
SkipRearm = 1 (DWORD)

By using this key, the Windows activation is preserved after executing *PrepareCaptureAction.exe* (activation is checked automatically by Windows during the first productive start after the image has been installed).

For further information: https://technet.microsoft.com/en-us/library/ff716063.aspx

### 3.7 Using your own Windows images

After the OS Deployment Agent has executed an indexing process of the available Windows images, they can be used for the related OS-Release.

A specific image is selected either during the configuration of an OS template or individually for each computer. See chapter "Create / edit OS templates".

### **3.8 Distributed infrastructures**

If your company has several sites or if you wish to provide the installation of operating systems with Columbus *Smart Deploy* for many different clients (mandate), several Infrastructure Service (so-called *Site Server*) will be in use.

Columbus Smart Deploy simplifies the provision and management of different OS-Release:

- Create a new OS-Release and provide an OS template. The OS Deployment Agent will automatically be the owner of this OS template.
- Replicate the data storage %OS-Depot% on the distributed infrastructure server (use Columbus *Replication*).
- Have each OS deployment agent of the distributed Infrastructure Service create an index of the data.

The Columbus infrastructure detects that the OS-Release already exists and offers the same OS templates as in the original on the OS Deployment Agent of the distributed infrastructure. The distributed infrastructure administrator can either use these or manage his own OS templates. However, he cannot modify OS templates that are not owned by his OS Deployment Agent.

### 3.9 Smart Deploy management

When data on the data storage %OS-Depot% are deleted or when OS Deployment Agent or Site Server is removed, the data in the database can become inconsistent. Columbus offers a maintenance option for these cases.

- > Highlight the Agent on the **Infrastructure** screen.
- > Click the Maintenance button in the menu ribbon.

	Columbus 7 Management Console
System Devices Users Security Organisation Reporting Tools Infi	astructure
Uplink Assign X Livate Deactivate Update Share Logfile Help	Configure Locations Schedule Logfie Create OS-Release Maintenance
General	OS-Deployment 😰 Smart Deploy 😼

Select the OS Deployment Agents to be maintained (inactive agents are displayed on a gray background):

OS-Deploy - DB Cleanup			-	
gents	OS-Deploy - DB clear Perform DB maintenance on OS	TUP -Releases and Templates		
ect OS agents to perform	n maintenance on			
Name	Domain	Include		
srv-v-be010	bwg			
srv-v-hh002	bwg			
srv-v-zg006	bwg			
srv-v-zg011	bwg			
srv-demo	bwgdemo			
srv-v-chqa	c7			
			OK	Cancel

In the following overview you can remove or reassign OS-Release without owner or agents, OS templates without related OS-Release as well as jobs without related OS-Release.

CHAPTER 4

# **Linux Deploy**

### In this chapter

Description	
Data storage	
Assign OS release	37

This section describes the basic functions which are required to operate an OSDeploy system.

# 4.1 Description

Columbus OS deployment allows for providing and installing Linux operating systems of different distributions. The installation can be adjusted using configurations and additional script-based jobs.

Columbus OS deployment is suited both for mass operations as well as for individual installations, and it offers clear procedures for scenarios with distributed infrastructures and different clients.

### 4.2 Data storage

퉬   🔂 🖺 👳		OSDepot		
File Home Share	View			
🔆 Favorites	Name	Date modified	Туре	
📃 Desktop	퉬 Centos7	11.03.2016 10:22	File folder	
🐌 Downloads	ESXi6.Srv	11.03.2016 10:22	File folder	
📃 Recent places	퉬 Fedora23	11.03.2016 10:22	File folder	
	퉬 OpenSUSE42	11.03.2016 10:22	File folder	
🛄 Desktop	PXELinux	08.05.2017 13:15	File folder	
] administrator	🐌 XEN6.Srv	11.03.2016 10:22	File folder	
💻 Computer srv-demo				

Field	Description
CentOS XEN6	Storage for individual distributions
PXELinux	Storage for additional data by Columbus infrastructure

# 4.3 Assign OS release

### 4.3.1 Single operation

Select a computer from the list of devices and navigate in the OS or Legacy Deploy tab:

Dashboard	OSDeployment SW Assignment Endpoint	Protection
Smart Depl	oy Legacy Deploy	
Release	👃 Centos7	¥
Site	🌆 MySite	~
Config	MyConfig	*
	Clear Configure Schedule	•
🕅 OS Inst	all is scheduled	

Field	Description
Release	Selection of an OS-Release
Site	Selection of a site
Config	Selection of a configuration
Clear	Remove the assignment of OS-Release, Site and Config from this computer.
Configure	Check or customize the configuration included in the Site/Config.
Schedule	Schedule the installation (Columbus supports Wake-On-LAN)
Text	Indicates if a Linux installation is already scheduled.

### CHAPTER 5

# Annex

### In this chapter

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Windows PE Image	.39
Network share "Columbus"	.41
"Columbus" user account domains	.42

# 5.1 Pre-Boot Execution Environment (PXE)

PXE stands for **P**re-Boot E**x**ecution **E**nvironment and is a component of the WfM (Wired for Management) specified by Intel. It permits a computer to connect to a server in the network before the actual operating system is started from the local hard disk. With PXE, a computer is linked to the network even if switched off.

### 5.1.1 DHCP Options for PXE

Columbus installs a Proxy DHCP server (PDHCP) on each Infrastructure Service. This is a part of the Preboot Services Agent. The following scenarios require different configurations:

- The Infrastructure Service and the DHCP server service are located on the same server.
- The Infrastructure Service and the DHCP server service are located on different servers.
- All Management Clients are located in the same subnet as the Infrastructure Service.
- Management Clients and Infrastructure Service are located in different subnets.

#### Columbus and DHCP on the same server

If the Infrastructure Service (and thus the PDHCP service) is installed on the same server on which also the DHCP server service is running, the following DHCP option is required.

- Option 60 PXE Client (Add PXE client configuration).
- If the DHCP server service is already installed at the time of installation or update, the option 60 will be automatically created by Columbus.

#### Columbus and DHCP on different servers

For this scenario, no specific settings are required.

#### All Clients in the same subnet as the Infrastructure Service

For this scenario, no specific settings are required.

#### **Clients and Infrastructure Service in different subnets**

In order to let the Clients know where to look for the Infrastructure Service or for the passing on of the broadcast of the Clients into the network, in which the Infrastructure Service is located, the following configuration has to be selected:

• Definition of the IP Helper on the corresponding routers.

NoteIn case of an upgrade from a Columbus Version 6.8 or older, it has to be made sure that the<br/>options 66, 67, 180, and 181 have been removed from the DHCP server.

#### Configuration

**Option Value 060** is no default option and has to be created at first. In this example, a Scope option is set.

@ECHO OFF ECHO The Options Value 060 is created and set... netsh dhcp server add optiondef 060 PXEClient String 0 comment="PXE Support" netsh dhcp server set optionvalue 060 STRING PXEClient

# 5.2 Wake on Lan

In order to reach the full PXE functionality, Wake on Lan (WoL) must also be supported on the computers. This allows to remotely switch on the computer provided that the MAC address of the installed network card is known. With WoL it is no longer necessary that an administrator switches on the computer. At the same time, e.g. diagnostic programs or, as in the case of OSDeploy, an inventory program or the preparation for an unattended setup can be loaded on the computer via PXE.

Note

The Columbus Base Agent of the corresponding company/site must be assigned to the Infrastructure Service for WoL to be able to operate.

The Console transfers a WoL action first to the local Infrastructure Service in the site where the computer is placed. The Columbus Base Agent sends a broadcast to the network first. This unique feature of Columbus enables to wake computers in different subnets, even in different locations across router sections.

WoL is based on a Broadcast Magic Package which is sent on the network. For WoL to be able to run, the network team must ensure on the one hand that such a broadcast will not be filtered in the network. On the other hand, it must be ensured that the computer accepts WoL, since not every network card which allegedly can actually does. Usually, a BIOS upgrade is helpful to solve any problems in this sense.

## 5.3 Windows PE Image

For the Windows deployment (Smart & Legacy), a Windows PE Image is loaded via PXE which serves as transfer medium during Windows installation.

Columbus uses the Windows PE images (winpe.wim) provided by Microsoft in the Windows ADK (Windows Assessment and Deployment Kit).

The Windows PE images are stored on the server that offers PXE (Preboot Services) under the following path:

C:\Program Files (x86)\Columbus\Infrastructure\PXEData\Boot\Images\x86 or \x64

NoteWindows PE is a reduced version of Windows. In order to use this version, the customer has to<br/>purchase Windows licenses or must possess a corresponding Microsoft Upgrade Assurance.

#### 5.3.1 Provide driver for Windows PE

Since Windows PE acts like a basically normal Windows, you also have to integrate the drivers for hard disk and network access in order to start the installation.

Columbus version	Windows PE version	Architecture
Columbus 7.1	2.1 (corresponds to Windows Vista, NT kernel 6.0)	Only x86
Columbus 7.2	3.0 (corresponds to Windows 7, NT kernel 6.1)	Only x86
Columbus 7.3	4.0 (corresponds to Windows 8, NT kernel 6.2)	x86 & x64
Columbus 7.4	4.0 (corresponds to Windows 8, NT kernel 6.2)	x86 & x64
Columbus 7.4.1	5.0 (corresponds to Windows 8.1, NT kernel 6.3)	x86 & x64
Columbus 7.5.0	10.0 (corresponds to Windows 10, NT kernel 10)	x86 & x64

The supplied Windows PE version varies depending on the used Columbus version:

The drivers for Windows PE x64 are stored under the following path:

I C:\Program Files (x86)\Columbus\Infrastructure\PETemplates\x64\Drivers

The drivers for Windows PE x86 are stored under the following path: I C:\Program Files (x86)\Columbus\Infrastructure\PETemplates\x86\Drivers

Note	Create a directory with a name for this driver (e.g. Dell FM76n).
-	

If you replaced the Windows PE images or if they were reset during Columbus Setup, copy the contents of (for x86 correspondingly):

I C:\Program Files (x86)\Columbus\Infrastructure\PETemplates\x64\Processed

after

I C:\Program Files (x86)\Columbus\Infrastructure\PETemplates\x64\Drivers

#### 5.3.2 Inject data into Windows PE

In order to provide drivers or further files and configuration settings for the next Windows PE session, they must be injected into the corresponding Windows PE images by the Preboot Services Agent.

#### How to carry out an injection

Navigate to the Infrastructure screen in the console and highlight the Infrastructure Service.

I The list below shows all agents which are available on this server.

Highlight Preboot Services Agent.

I The menu ribbon shows all available functions.

> Select the item Inject Windows PE files in the menu ribbon and schedule this action:



Note Always carry out this action after a Columbus update or after transferring a Windows PE image to a different server.

### 5.4 Network share "Columbus"

The depot directory of the setup routine is pre-configured by default as network share "Co-lumbus".

If you wish to modify this share, we recommend to proceed as follows:

Select the data directory (e.g. D:\Columbus ), select the properties screen in the context menu and select on it the *Share* tab:

General	Sharing	Security	Previous Versions	Customize	
Netwo	ork File and	l Folder Sh	aring		
	Colum Not Sh	bus nared			
Netw Not S	ork Path: Shared				
S	hare				
	ICCU JIIGII	IQ DI			
Set c adva	ustom pem nced sharir Advance	nissions, cr ng options. d Sharing	eate multiple shares,	and set other	
Set c adva	ustom pem nced sharir Advanced	nissions, cr ng options. d Sharing	eate multiple shares,	and set other	-
Set c adva	Advance	nissions, cr ng options. d Sharing	eate multiple shares,	and set other	F

Use the menu item Advanced sharing to confirm the release and enter a name. When the menu item Authorizations is selected, an additional dialog opens to define the user group that can use this share:

📕 Columbus Properties	$\times$			
Advanced Sharing	$\times$	Permissions for Columbus		×
Share this folder Settings Share name: Columbus Add Remove Limit the number of simultaneous users to: 16777 Comments: Permissions Caching OK Cancel Apply		Share Permissions Group or user names: Everyone Permissions for Everyone Full Control Change Read	Add Allow	Remove Deny C
OK Cancel Apply	r	OK	Cancel	Apply

I Set the user group All and enable Edit and Read.

Confirm both dialogs and select the Security tab in the properties menu that is still open. When the menu item Edit is selected, an additional dialog opens to define the user group that can use the data within this (directory) share:

🖡 Columbus Properties 🛛 🕹	
General Sharing Security Previous Versions Customize	Permissions for Columbus X
Object name: C:\Columbus Group or user names: CREATOR OWNER SYSTEM Administrator (SERVER-2016\Administrator) Administrator (SERVER-2016\Administrator)	Security Object name: C:\Columbus Group or user names: CREATOR OWNER SYSTEM Administrator (CEDVCE 2010) Administrator)
To change permissions, click Edit. Permissions for CREATOR OWNER Allow Deny Full control Modify	Administrator (SERVER-2016 VAministrator)  Administrators (SERVER-2016 VAministrators)  Columbus (BWGDEMO\Columbus)  Users (SERVER-2016\Users)  Add  Remove
Read & execute List folder contents Read Write For special permissions or advanced settings. Advanced	Permissions for Columbus     Allow     Deny       Modify     Image: Columbus     Image: Columbus     Image: Columbus       Read & execute     Image: Columbus     Image: Columbus     Image: Columbus       List folder contents     Image: Columbus     Image: Columbus     Image: Columbus       Read     Image: Columbus     Image: Columbus     Image: Columbus       Write     Image: Columbus     Image: Columbus     Image: Columbus
Close Cancel Apply	OK Cancel Apply

I Set the Columbus domain user and enable Edit, Read and Execute, Read folder contents, Read and Write.

# 5.5 "Columbus" user account domains

The Columbus account (or the one used for it) must never be the administrator in the relevant domain. Simple user rights are sufficient. The only exception is that the user account must be able to create computer accounts in the domain. If some computers must often be setup again (e.g. test computer), it is advisable that the Columbus account may also add again computers into the domain.

If Microsoft Active Directory (AD) is used, create a central user account that is authorized for the future access of the decentralized Columbus client to the server system shares (UNC shares). Columbus can be used without any limitation with AD separated from each other or used together with workgroups.

#### Service account

User: columbu	JS
Password:	Brainware123 (or according to your complexity guidelines)
PW change:	Deactivate for this user account
Policy:	No limitations, no profile roaming
Special:	Create and delete (modify) authorization for AD objects (computer)

**Note** In case of computers that were added by a domain administrator, it is possible that a user with non-administrative rights cannot add again a computer into the domain.