# **Columbus Installation**

**User Manual** 

Module version 7.6



Issue: 12.18

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# General

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 Target Group

This manual is intended for all users who want to learn how to work with Columbus. After a general information and an explanation of the key terms you will be lead step by step through the installation, configuration and use of the available modules.

## 0.2 Supplementary documents

Please refer to the following manuals for additional information about the described topics:

- Columbus **OSDeploy** Describes the setup and operation of OSDeploy and the PXE functionality.
- Columbus Imaging Describes the setup, operation and procedures of the Disk Imaging solution.
- Columbus Software Deployment
   Describes the software and patch distribution, setup and operation of
   SWDeploy/PatchDeploy, operation of the Management Clients and software packaging.
- Columbus **PatchDeploy** Describes the setup, operation and procedure during patch management.
- Columbus **Inventory** Describes the possibilities of inventorization such as basic inventory, inventory jobs and InventoryScanner.
- Columbus **DataBackup** Describes the usage of the DataBackup module for backup and recovery of user data.
- Columbus Replication
   Describes the replication of data carried out in the background between different software
   depots.
- Columbus PackageStudio
   Describes how to edit packages and configure the PackageStudio.
- 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).

•

## columbus

The following OEM documents are delivered with Columbus.

- RemotelyAnywhere
- Extensive documentation about operation and configuration of RemotelyAnywhere.
- Paragon\_Manual\_HDM\_deu
   User documentation for the operation of the user interface.
- **Paragon\_Script\_Manual** Description of the script commands for the fully automated execution. Columbus has already prepared and tested scripts.

## 0.3 Typographical conventions

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

Format	Description
Bold font	Elements in the software or in the operating system, such as menu items, buttons or elements of a selection list
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.

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 sys- tem (crashes, data loss, system failure).

## 0.4 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

I 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**

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** http://www.brainwaregroup.com/de-ch/kalender/train-

ing.html?utm\_source=bwg.KC&utm\_medium=referral menu point

## 0.5 Licensing

Columbus is divided into function modules for a wide range of applications which can be combined freely, according to the requirements of the customer. On purchase, each module will be equipped with one or more license features, which activate the desired functions.

You will find an overview of currently available modules under www.brainwaregroup.com/produkte.

To find the best possible combination - or in order to learn about prices and special offers - we recommend to contact an authorized brainwaregroup partner or our direct sales department.

#### Switzerland/Headquarter

Brainware Solutions AG Sumpftrasse 15 CH-6300 Zug Tel +41 41 748 22 00 sales.ch@brainwaregroup.com

#### Asia

Brainware Japan, Inc. Anzen-Building Residence 2006 1-6-2 Motokasaka Minato-ku, Tokyo 107-0051, Japan Tel +81 3 5775 0208 sales.jp@brainwaregroup.com Spider LCM GmbH Paul-Dessau-Strasse 8 DE-22761 Hamburg Tel +49 40 788 999 0 sales.de@brainwaregroup.com

Germany/Austria

#### Africa

Columbus Technologies SA (Pty) Ltd Corporate Corner, Block 8 5 Marco Polo street, Highveld 0169, Centurion, Gauteng, South Africa Tel +27 12 665 1559 sales.sa@brainwaregroup.com

Please refer to the list of current partners and their contact details under www.brainwaregroup.com/partner.

#### **Licensing Rules**

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 Software can restrict or stop the opera-<br/>tion after an under-licensing period of 30 days.

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

### CHAPTER 1

## Installation

## In this chapter

Prerequisites	
Installation process	
Activate the license	
Check installation	

This manual describes a complete installation of Columbus. Depending on the license, certain modules may be unavailable in your environment. Special options are described in the corresponding manual.

**Note** Columbus a 32-bit application. Installation and operation are designed in a way so they can be optimally used on 64-bit platforms.

## **1.1 Prerequisites**

The following is required for the installation of a Columbus Infrastructure Service:

- Administrator rights
- Windows Server 2008 SP2, 2008R2, 2012, 2012R2 or 2016
- SQL Server 2014 or SQL Server 2016 (local or remote)
- SQL Native Client
- DHCP Server (for PXE / OS deployment)
- IIS 7, 8 or 10 (Master Server incl. license server)
- Microsoft .Net Framework 4.6
- Active directory or workgroup
- Setup and license file (see page 17)

NoteThe setup has to be executed from a drive with assigned drive letter. For a basic installation,<br/>UNC paths are not supported.

### **1.1.1** Accounts and sources

During the installation you are prompted for some information required by the setup assistant.

#### SQL Administrator (e.g. SA)

Columbus requires a special SQL user account to create and modify databases. This will only be used during setup and is not stored.

**Tipp** Allows the use by the SQL user SA or another user with sysadmin role.

#### Columbus SQL-DB-Account (e.g. ColumbusRW)

Columbus requires a special account for access to the databases. They will be entered as normal user in the SQL Server and have access to the three databases with DBO authorization.

Tipp

We recommend to accept the default value *Brainware123* for a demo installation.

#### Columbus Admin account (active directory user)

The setup requires a Windows account with user name and password to install an operating system, install software, inventorize systems and add a system to the domain.

The user needs access rights for the software and operating system directories on the Infrastructure Service as well as the right to add computer accounts to the domain.

#### **OSDeploy Smart**

For the Smart Windows OS-Deployment, the setup requires a password to be used with the local administrator and the lock screen during OS deployment.

The local administrator password is only transferred when setting up new computers and only at the end of the installation process.

#### **OSDeploy Linux**

For Linux deployment, the setup requires a password to be used for the local root user.

The local root password is only transferred when setting up new computers and only at the end of the installation process.

#### **E-Mail settings**

During setup, the SMTP server incl. port and a user with password, as well as the corresponding E-Mail address for SMTP access can be stored.

Additionally, mail recipients for infrastructure, reporting and deployment E-Mails are stored and tested.

#### Active directory user

#### **Columbus Admin Account**

The Columbus Admin Account is a special user that must have the right to add or remove a computer account to or from a domain.

If no such user is provided, it can be created as follows:

- > Open the active directory for users and computers
- Activate in the menu under > View > Advanced Features
- Activate the domain the settings of which must be adjusted and open the properties using the context menu.
- Switch to the Security tab and click on Advanced.
- Click on Add on the lower left to create an entry.
- > Define the desired user under Select a principal.

L		Permission Entry for bwgdemo	-	2	×	
Princi	pal: Select a principal				^	
Туре:	Allow	✓				
Applie	es to: This object and all descendant objects	Y				

- > After selecting the user, define the authorizations as follows:
- > "Applies to: " must be defined with "This object and all descendant objects".
- The following rights must be set: "List contents", "Read all properties", "Write all properties", "Read permissions", "Modify permissions", "Modify owner", "Create Computer objects" and "Delete Computer objects".
- > Click on OK to accept these adjustments in a new security settings entry.

		Permi	ssion Entry for bwgdemo	-	×
Principal: Type: Applies to:	Columbus Service Account (Columbus@bwgde Allow This object and all descendant objects	rmo.corp)	Select a principal		
Permissions	s: Full control		Create MSMQ Queue Alias objects		
	<ul> <li>✓ List contents</li> <li>✓ Read all properties</li> </ul>		Delete MSMQ Queue Alias objects Create msPKI-Key-Recovery-Agent objects		
	Write all properties		Create msPKI-Key-Recovery-Agent objects     Delete msPKI-Key-Recovery-Agent objects		
	Vente all properties     Delete		Create msSFU30MailAliases objects		
	Delete subtree		Delete msSFU30MailAliases objects		
	Read permissions		Create msSFU30NetId objects		
	Modify permissions		Delete msSFU30NetId objects		
	Modify owner		Create msSFU30NetworkUser objects		
	All validated writes		Delete msSFU30NetworkUser objects		
	All extended rights		Create msTPM-InformationObjectsContainer objects		
	Create all child objects		Delete msTPM-InformationObjectsContainer objects		
	Delete all child objects		Create nis/Nap objects		
	Create Computer objects		Delete nisMap objects		
	Create Computer objects		Create nisNetgroup objects		
	Create Contact objects		Delete nisNetgroup objects		

Click on OK to store these settings.

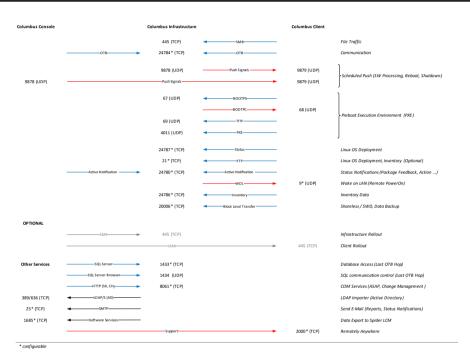
Owr	ner:	Administrators (BWGDEMO\/	Administrators) Change			
Per	mission	Auditing Effective A	ccess			
	addition nission e		mission entry. To modify a	permission entry, sele	ct the entry and click Edit (if available)	
	Туре	Principal	Access	Inherited from	Applies to	1
82	Allow	Pre-Windows 2000 Compatib	List contents	None	This object and all descendan	
82	Allow	Administrators (BWGDEMO\	Special	None	This object and all descendan	i
82	Allow	Everyone	Read all properties	None	This object only	
82	Allow	ENTERPRISE DOMAIN CONT	Special	None	This object only	
8	Allow	Columbus Service Account (	Special	None	This object and all descendan	
88	Allow	Pre-Windows 2000 Compatib	Special	None	Descendant InetOrgPerson o	
82	Allow	Pre-Windows 2000 Compatib	Special	None	Descendant Group objects	
82	Allow	Pre-Windows 2000 Compatib	Special	None	Descendant User objects	
82	Allow	Authenticated Users	Enable per user reversi	None	This object only	
82	Allow	ENTERPRISE DOMAIN CONT	Replicating Directory	None	This object only	
88	Allow	Authenticated Users	Unexpire password	None	This object only	
_	Add	Remove Edit			Restore default	s

## **1.1.2** Configuration of the virus scanner

On the Columbus server system, the virus scanner must include the following exclusions:

- %\_ProgramFiles32%\Columbus\Infrastructure\
- %\_ProgramFiles32%\Columbus\Console\
- %\_ProgramFiles64%\Microsoft SQL Server\MSSQL<SQL-Version>.<SQL-Instanz>\MSSQL\DATA
- ?:\SQLDATA\Database
- ?:\SQLDATA\Backup

### **1.1.3** Network ports used



The network ports vary depending on the modules and components applied.

### 1.1.4 System Requirement

Please find below the requirements and recommendations for Columbus Systems. The requirements represent basic recommendations as well as imperative prerequisites which enable an optimum usage of the installed components.

#### Infrastructure Service

#### Minimum

- OS: Microsoft Server 2008 SP2 or higher
- CPU: 1 GHz or better
- RAM: 4 GB
- HDD: 5 GB free disk space
- Physical or virtual
- Microsoft .NET Framework 4.6

- DBMS: Microsoft SQL Server 2014 & 2016 (local or in the network)
- SQL Native Client

#### Recommended

- OS: Microsoft Server 2016
- CPU: 2 GHz or better
- RAM: 8 GB
- HDD: 10 GB free disk space
- Virtual
- DBMS: Microsoft SQL Server 2016
- SQL Native Client

For the central license server (included in the Master Server), also IIS and .NET 4.6 are required.

Note	The specifications on capacity requirements vary according to the needs of Windows installa- tion media and storage for SW packages.
	The SW & OS depots may also be set up on other systems, such as NAS. To do this, an access option via a Windows UNC network connection (Sambashare) is required.
Note	In case of larger environments (> 1000 computers), it makes sense to separate the database and the activities of the Columbus agents.

#### SiteServer

The requirements are based on the minimum of the master server. These requirements vary depending on the number of simultaneous accesses by the clients.

#### **SQL** Server

#### Requirements

- Physical or virtual
- Locally on the Master Server or on a different server in the network.

#### Supported versions

- Microsoft SQL Server 2014
- Microsoft SQL Server 2016 (recommended)

#### Supported editions

- Express (max. database size 10 GB, max. RAM 1410 MB, max. CPU 1 socket or 4 cores, max. 1 instance)
- Standard
- Business Intelligence (only SQL 2014)
- Enterprise

#### Settings

- The SQL Server authentication must be executed in the mixed mode.
- The TCP/IP protocol must be active in the SQL Server.
- We recommend to run the SQL Server browser service.
- We recommend to configure the SQL Server service on a static port. (Default would be TCP 1433)
- Configure the Windows Firewall so that the SQL Server and the SQL Server browser can be addressed from the network.

#### **Management Console**

- OS: Microsoft Windows Server 2008 SP2 / Windows Vista SP2 or higher
- CPU: 1 GHz or better
- RAM: Min. 1GB HDD: Min. 210 MB
- Minimum screen resolution 1440x900

#### **Management Client**

- OS: Microsoft Server 2003 SP2/WinXP SP3 or higher
- CPU: 1 GHz or better
- RAM: Min. 1GB
- HDD: Min. 500 MB

#### **Preboot function**

The preboot function (PXE) requires a DHCP server. The network adapters of the clients must be PXE capable/activated and the used computers require the latest BIOS version, because PXE is often poorly implemented on older computers.

We recommend to use entries in the network components (e.g. switch, router, etc.).

• Entry of an IP helper or additional DHCP relay in the corresponding subnets which indicates the IP address of the responsible Columbus server

**Tipp** Please use a separated network if you carry out tests.

### **1.1.5** Installation files

For the installation you will need the setup and license file.

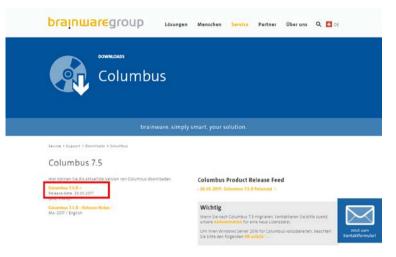
#### **Download Columbus**

The installation file can be downloaded from the website **www.brainwaregroup.com**.

#### How to download the installation file

- **Co to www.brainwaregroup.com** and select **Service > Downloads** in the menu.
- Below Columbus Software Management, click To the download >

> Click Columbus 7.5.0 > to download the installation file.



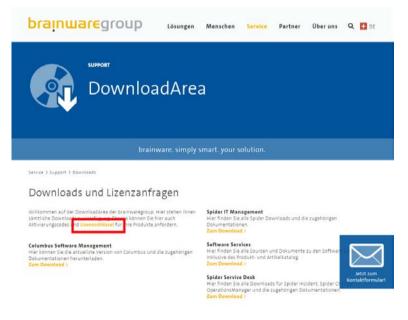
### **Apply for license**

During the installation process, a current and valid license is necessary. You can apply for this license on our website.

#### How to apply for a license

- ➢ Go to www.brainwaregroup.com and select Service > Downloads in the menu.
- Click on License key.

I The link takes you to the form Apply for license key.



> Please fill in at least the fields marked with an asterisk (\*) and click on Send >.

Lizenzschlüssel anfordern		
Kundenname	thre Kontaktdaten	
Testfirma AG	Anrede	
Lizenzfile für*	ber	
sizenzive fur	1417	let
Columbus	Vorname"	Kontak
	Hugo.	
Spider / Software Services	Name"	
Grund der Uzenzschlüsselanförderung	Testmann	
Update		
	E-Mail"	
Bemerkung	huga testmann@testforma.ch	
Update von Columbus 7.4.1 auf Columbus 7.5.0	Firma"	
	Testfirma AC	
	Adresse	
	Testweg 12 6300 Zug	
	Telefon	
	-41.41 xxx xx xx	

## **Note** The application is checked manually. Therefore, a fast reply is only ensured during the usual office hours.

After checking the request, you will receive the license file per E-Mail.

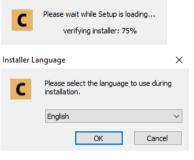
## **1.2** Installation process

This process describes the work steps indicating the recommended default values.

NoteDuring the installation, we recommend to accept the values proposed by the setup wizard. You<br/>can modify and adapt a completed installation later on.

#### How to start the setup wizard

- > Double-click on the setup file C7setup.exe.
- > Select the language for the installation process in the list box and click on **OK**.
  - I The language selection applies only for the setup wizard. The language selection for Columbus can be done later.



Click Next in the Welcome window to start the installation.



## 1.2.1 License agreement

- > Read the license agreement.
- > Activate the checkbox and click on **Next**.

Co	lumbus	_		×
	nse Agreement se review the license terms before installing Columbus.	brainu	uareg	roup
Pre	ss Page Down to see the rest of the agreement.			
Lie	cense agreement			^
1	Usage rights The licensee receives the non-exclusive, non-transferable rig Brainware software for an indefinite period of time for his ow according to the conditions stipulated. The usage right includ software for a maximum number of the licensee's machines ( workstations) or users, as indicated in the applicable license	n requiremen es the right to servers and	ts o use the	*
agri	ou accept the terms of the agreement, dick the check box belo sement to install Columbus. Click Next to continue. I accept the terms of the License Agreement	w. You must	accept the	2
Braii	nware Consulting & Development AG	Next >	Can	

### 1.2.2 License file

- Enter the path to the license fileLicense.xml and click on Next.
  - I The installation cannot be continued without a license file.

C Columbus		_		$\times$
License File Please choose licer	ise	brain	wareg	roup
a license has bee	ne license that is supposed to be used for n found in the same folder from where y ill be displayed, please check if this is cor brainwaregroup 31.12.2017	ou started the setu	p the name	
E: \brainwaregr	oup - C7.4 - 2017.01.03.license.xml			
© Brainware Consulti	ng & Development AG <b>&lt; Back</b>	Next >	Canc	el

#### 1.2.3 Components

Use this dialog window to define which type of installation you would want to carry out.

> Select the desired installation type, enter the server FQDN and click on **Next**.

C Columbus		_		×
Choose Component Choose type of installation		brainu	uareg	roup
Options Master Server (Only on Site Server	e per organisation)			
Own FQDN FQDN:	srv-2016-x64.bwgdemo.corp			
© Publicutor Consulting 9, Daylo	annach AC			
© Brainware Consulting & Deve	< Back	Next >	Cano	cel

Option	Description
Master server	Central server that also contains the Columbus Database (local or remote). This server must always be installed as the first component of a Columbus System and can only be granted once as role.
Site server	Typically, Site Server are used in external locations or for the purpose of re- ducing the load. If OSDeploy, SWDeploy, or UpdateManagement are used, these servers also contain replications of the data depots to reduce the net- work traffic on the WAN.

### 1.2.4 System requirements

Use this dialog window to check the necessary system requirements.

- > Click on **Details** to obtain more information on a highlighted check.
- > Click on **Rescan** to recheck the system requirements.
- > Make sure that all checks were successful and click on **Next**.

ecking	equirements system requirements.	brainwaregro
State	Item	Message
0	OS Version requirements	Pass
0	Administrative user	Pass
0	IIS settings	Pass
0000000	IIS management scripts and tools	Pass
$\bigcirc$	IIS Asp .Net settings	Pass
$\checkmark$	Microsoft .Net 4.6 installed	Pass
$\checkmark$	FIPS compliant algorithms disabled	Pass
$\bigcirc$	Validating previous Columbus installation	on Pass
	License Console not running	Pass
	Details	Rescan

### **1.2.5** Target directory for program files

Use this dialog window to define the installation directory for Columbus.

> Accept the installation directory and click on **Next**.

- or -	
Click on <b>Browse</b> and select the insta	allation folder.
C Columbus	– 🗆 X
Choose Install Location Choose the folder in which to install Columbus.	brainwaregroup
Setup will install Columbus in the following folder. To install i and select another folder. Click Next to continue.	n a different folder, dick Browse
Destination Folder  C:\Program Files (x86)\Columbus	Browse
Space available: 28.1GB © Brainware Consulting & Development AG	Next > Cancel

### 1.2.6 Options

Use this dialog window to determine the location of the depot structures (e.g. OS depot, SW depot and inventory depot).

Important	Due to performance and backup reasons, we recommend to not create these data in the sys- tem drive of the server but to select another drive or preferably a separate disk.
	Accept the default values for the path and release and click on Next.
	- or -
	Click on <b>Browse</b> and select the repository directory.
	Accept the feature Option Local Management Client in order to execute the local installa- tion of a management client.
	<ul> <li>Accept the feature Option Prepare Autoupdate for Management Client in order to imple- ment the automatic updates on the server.</li> </ul>
	> To continue, click on <b>Next</b> .
	C Columbus – 🗆 X Install options brainwaregroup
	Please choose the desired options  Please choose the desired options  Repository share Local Path: D:\Columbus
	Share name: Columbus
	Feature options
	Prepare Autoupdate for Management Client
	© Brainware Consulting & Development AG

Note

The paths and settings for the depots may be changed afterwards.

### **1.2.7** Start menu group

Use this dialog window to define which program group will be used for the Columbus link in the Start menu.

> Accept the default value and click on **Next**.

C Columbus	_		×
Choose Start Menu Folder Choose a Start Menu folder for the Columbus shortcuts.	brain	wareg	Jroup
Select the Start Menu folder in which you would like to create the p can also enter a name to create a new folder.	orogram's sh	ortcuts. Yo	DU
Columbus Accessibility Accessories Administrative Tools Maintenance Microsoft SQL Server 2016 StartUp System Tools Windows PowerShell			
© Brainware Consulting & Development AG	Next >	Car	ncel

### **1.2.8** Firebird settings

In case of a migration, this dialog window is displayed to define the access to the existing Columbus Database.

> Enter the specifications on the existing Columbus Database and click on **Next**.

C	Columbus	_ <b>D</b> X
Firebird Settings Firebird Migration Settings		brainwaregroup
Firebird Settings Database path: Columbus User:	D:\Columbus\Database ColumbusRW	
Password: SYSDBA Password	•••••	••••••
© Brainware Consulting & Dev	elopment AG < Back	Next > Cancel

### 1.2.9 SQL connection

Use this dialog window to define the SQL connection and the relevant user together with his password.

- Enter the SQL Server under SQL Server Name. If it is a SQL Server Express, the instance must be specified as well.
- If the logged-in Windows user has no administrative rights on the SQL Server, a SQL user must be entered.
  - For this purpose, activate the checkbox Use SQL user to connect to DB.
  - Enter a SQL user with administrative rights in Username. (e.g. sa)
  - Enter the password in **Password**.
- > Click on Next.

L Connection and Instantion is used to execute the second		brain	wareg
ease verify name and insta	nce of the SQL server used fo	r Columbus	
QL Server Name (optional I	nstance Name)		
SRV-2016-x64.bwgdemo.co			
	ю ов.		
JUse SQL user to connect t Username: sa			
Username:			
sa Password:			
Username:			
Username: sa Password:			

### 1.2.10 SQL requirements

Use this dialog window to check the necessary SQL Server requirements.

- > Click on **Details** to obtain more information on a highlighted check.
- > Click on **Rescan** to recheck the SQL Server requirements.
- > Make sure that all checks were successful and click on Next.

Columb QL Serv Check SQ		- Drainware	x grou
State	Item	Message	
$\bigcirc$	SQL server details	Pass	
0	SQL authentication setting	Pass	
0	Check Collation	Pass	
00000	Connecting user can create SQL users	Pass	
0	Connecting user can create databases	Pass	
0	Query available Logins	Pass	
$\bigcirc$	Get available empty database names	Pass	
$\odot$	SQL Native Client	Pass	
	Details	Rescan	
Brainware	Consulting & Development AG		
	< Back	Next > Ca	ncel
	Coduc	INEXC > Co	incer

### 1.2.11 SQL database

Use this dialog window to define the SQL databases.

> Accept the default values for the three databases and click on **Next**.

ne to create. dit lumbus dPoint
lumbus
dPoint
ings of the SQL server.
tt

## 1.2.12 SQL database prerequisites

In case of a new installation, use this dialog window to check the necessary SQL database prerequisites.

- > Click on **Details** to obtain more information on a highlighted check.
- > Click on **Rescan** to recheck the SQL database prerequisites.
- > Make sure that all checks were successful and click on Next.

State	Item	Message	
9	Database name does not contain illegal characters	Pass	
$\sim$	Database name does not contain unicode characters	Pass	
$\sim$	Prefix does not start with digit	Pass	
$\sim$	Check for existing database with chosen name	Pass	
$\sim$	Check that existing databases are empty	Pass	
$\sim$	Check for alter permission on existing databases	Pass	
<b>&gt;</b>	Check for extended properties in databases	Pass	
00000000	Check database collations	Pass	
	Check if empty DB matches generated name	Pass	
<b>&gt;</b>	Check for Always ON Availabilty on databases	Pass	
	Details	Rescan	

### 1.2.13 Columbus SQL login

During the installation of the Columbus Database, an internal Columbus database account named *columbusrw* with read and write rights is created. This account is used by all Columbus server components for accessing the Columbus Database database.

> Enter a password and click on **Next**.

C Columbus			- 🗆 X
Login for SQL server ad			brainwaregroup
O Use existing user	Username		$\sim$
Obe existing user	Password		
	Username	ColumbusRW	
Create new User		Password	Repeat password
		•••••	•••••
Please choose a passw Server!	ord that complies	s with your complexity set	tings of your Domain or SQL
© Brainware Consulting &	Development A(	< Back	Next > Cancel
		- Duck	Guilder

### 1.2.14 Organization

In case of a new installation, various Columbus components require special access rights and authorizations e.g. for accessing the operating system sources, software packages for including a new computer into the Active Directory or for the installation of software. For this purpose, the setup requires a user account that has the necessary rights.

> Enter the domain and the login/password and click on Check.

olumbus User Account	
omain:	bwgdemo.corp
ogin:	columbus
assword:	•••••
	Check
lame for managed orga	inisation
Company:	brainwaregroup

> If the check was successful, this will be indicated with Authentication successful.



The top element in a Columbus structure is the company. Enter the name of the company which you want to manage with Columbus. The setup will create this company in the structure tree.

Enter the company name and click on Next.

Important The use of '.' (dot) in the company name is not permitted.

### 1.2.15 System administrator

Use this dialog window to define the Admin account for the Management Console.

> Enter a password and click on Next.

C	Columbus	
System administrator Password for sysadmin user		brainware
Password for sysadmin user Password:		-
Brainware Consulting & Develop	ment AG	2

**Note** The password of the sysadmin can be adjusted in the admin console after installation.

### **1.2.16** Smart Windows OS Deployment

Use this dialog window to define the default settings for the Smart Windows Deployment.

> Enter the required data and click on Next.

Columbus Smart Windows OS-Deplo Settings	yment brainwa	- ×
Unattend Settings		
Please choose:	Switzerland (German)	$\sim$
Registered User	brainwaregroup	
Registered Company	brainwaregroup	
Keyboard	German - Switzerland	$\sim$
System Locale	German (Switzerland)	$\sim$
User Locale	German (Switzerland)	~
Timezone	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Sto	d ~
Admin Password	•••••	
Brainware Consulting & Deve	elopment AG	
	< Back Next >	Cancel

### 1.2.17 Legacy Linux Deployment

Use this dialog window to define the default settings for the Legacy Linux Deployment.

$\triangleright$	Enter th	ne requ	ired d	ata ar	nd click	on <b>Next</b> .
------------------	----------	---------	--------	--------	----------	------------------

C Columbus		-		×
Legacy Linux-Deployment Root Password		brainw	iareg	roup
Root Password Password	•••••	•••••		
© Brainware Consulting & Develop	ment AG < <u>B</u> ack	<u>N</u> ext >	Cano	el

### 1.2.18 Email settings

When carrying out a new installation, the basic e-mail settings can be defined for different components for sending notification and error e-mails.

Here, you can determine which sort of E-Mails must be sent.

- > Enter the required information and click **Test** to send a test e-mail of the selected type.
- > After all tests are successfully completed, click on Next.

C	Columbus				_		×
	mail Settings SMTP and recipient se	ettings		bra	ainm	l <mark>are</mark> gr	oup
	SMTP Server: Login: Password: Sender:			Port:	25		
© B	Mail recipients (com Infrastructure: Reporting: Deployment: Irainware Consulting		< Back	Next :		Test Test Test Cance	
			< Dack	Next	~	Cance	51

Before the installation is started, it is possible to go back in the menu by pressing the back button and correct the relevant options.

> If you wish to start the installation, click on **Install** to start the installation.

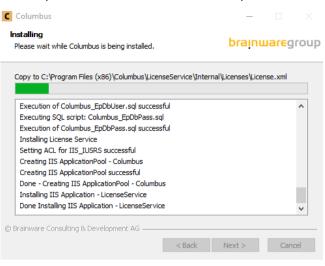
### **1.2.19** Installation process

Before the installation is started, it is possible to go back in the menu by pressing the back button and correct the relevant options.

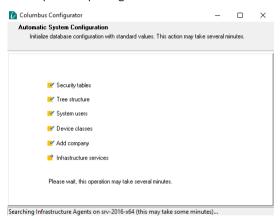
C Columbus	– 🗆 X
Install Confirmation	brainwaregroup
Instal Confirmation Ready to instal	
© Brainware Consulting & Development AG	Install Cancel

> When you want to start the installation, click on Install.

The setup wizard installs first the defined components.



In case of a new installation, the setup wizard starts the configuration of the database and services upon completing the installation.



After configuring the database and services, the setup wizard concludes the installation.

C Columbus	-	• 🗆 ×
Installation Complete Setup was completed successfully.	braj	nwaregroup
Completed		
Starting Service - Columbus.exe Started Columbus, exe successful. Initial Infrastructure Configuration Initial Configuration successful Installing Documentation Cleaning up Creating Uninstaller Writing Uninstall Information Creating Shortcuts Completed		*
© Brainware Consulting & Development AG ——	< Back Next >	Cancel

### 1.2.20 Finish setup

This dialog window indicates that the installation has been completed.

- > Click **Finish** to exit the setup wizard.
  - I If the option Launch Management Console remains active, the Management Console is started automatically.

```
      Columbus
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```

## **1.3** Activate the license

After successful installation, the Columbus license must be activated.

### **1.3.1** Create an activation request

The first step for activating the license is to create an activation request.

#### How to create an activation request

- > Start the Columbus license console.
- > Activate the required license in the *Licenses Information* grid.
- Press Save Activation Request for Selected License ID on the drop down menu with the right mouse button to save the activation request.
- > Enter a file name and save the activation request in the required directory.

### **1.3.2** Apply for an activation file

You can apply for an activation file with the activation request that you just created.

#### How to apply for an activation file

- Send an e-mail with the activation request in the attachment to the license administration (licensing@brainwaregroup.com).
   Note The application is checked manually. Therefore, a fast reply is only ensured during the usual office hours.
   After checking the request, you will receive the activation file per E-Mail.
  - > Save the activation file attached to the e-mail on the server.

### **1.3.3** Activate the license

You can now execute the activation using the activation file that you just received.

#### How to activate your license

- > Start the Columbus license console.
- > Activate the relevant license in the *Licenses Information* grid.
- Press Import Activation Information File on the drop down menu with the right mouse button to execute the activation.
- > Select the activation file that you just saved and click on **Open**.
- After successful activation, that license console must be shut down and the IIS service and the Columbus Infrastructure Service must be restarted.

Alternatively, you can simply restart the server.

## **1.4** Check installation

After a successful installation or update of the Columbus System we recommend to check the installation using the following steps:

- Check Columbus system user
- Login to the system
- Check agents

The default password for all internal Columbus System users is *Brainware123*. Please change it later in the Console.

### **1.4.1** Check Columbus domain user

During the installation, the Columbus System prompts for the input of a user name/password for the Columbus user account which is later used by the Management Client and the agents for connection to operating system sources, software packages, etc.

Depending on the rights which you possess during installation after log-in, the creation of this user may fail. The user creation may also fail if the specified password does not correspond to the given complexity guidelines of the domain controller.

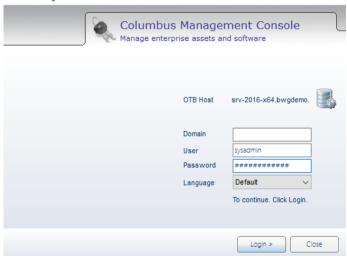
Therefore, verify that the account has been created in the domain and has access to the depot directories such as OS depot or SW depot.

### 1.4.2 Login to the system

During the installation, the Management Console (CMC.exe) has been installed on your computer and a link in the start menu has been created.

Click on the Windows start button and select Programs > Columbus > Management Console.

Columbus Login



- > Enter your user name and password and click on Login
  - I For the login, use the user data default values (sysadmin / brainware123) which have been setup during the installation.
  - I In case of existing (migrated) systems you can log in with the same ID as used before the migration.

### **1.4.3** Check the infrastructure services

> Activate the Infrastructure view in the Console.

I All agents registered on the Infrastructure Service are listed.

Devices	Users	Site Management	Infrastructure	

	srv-v-demo02	v-hh002[prod] 🚦 srv-	v-zg006(prep) v-zg006(prod) w8-rop3	
Company	Agent 🛆	Last contact	Last status	
✓ brainwaregroup	COM Interface	23.09.2011 09:17:08	Server started on port 8061	
✓ brainwaregroup	Columbus Base	04.10.2011 14:02:22	Last startup completed at 04.10.2011 14:02:22	
✓brainwaregroup	Data Backup Server	04.10.2011 14:10:13	Active and running.	
✓ brainwaregroup	Database Backup	11.08.2011 11:12:27	Backup terminated successfully at 11.08.2011 11:12:27	
✓ brainwaregroup	Indexing and Network Scanner	23.09.2011 09:17:21	Agent active and running.	
✓ brainwaregroup	Inventory Collection	11.08.2011 12:13:09	Productlist refresh completed at 11.08.2011 12:13:09	
🗴 brainwaregroup	LDAP Synchronisation			
✓ brainwaregroup	OS Deployment	23.09.2011 09:17:08	Activated own FTP Server on port (21)	
✓ brainwaregroup	Patch Deployment	16.08.2011 11:07:05	Patch definitions download completed at 16.08.2011 11:07.	
✓ brainwaregroup	Preboot Services			
✓ brainwaregroup	Replication Server	04.10.2011 14:08:55	Active and running.	
✓ brainwaregroup	Reporting and Cleanup			
	Software Deployment	25.08.2011 10:56:16	Last refresh completed at 25.08.2011 10:56:16	

- The last status is displayed in the Last contact column.
- All components selected in the setup routine or their agents are pre-configured and ready for use.

In order to check whether the agents are working, we recommend a refresh of each agent.

#### How to carry out a refresh operation

- Highlight e.g. Software Deployment Agent and select the Schedule function in the menu ribbon.
- ➢ In the dialog window Refresh SW Depot Index List, activate the option Process now and click on OK.

The updates require some minutes. In the **Last status** column you can see whether the action has started or if it is already completed.

### CHAPTER 2

## Annex

## In this chapter

SQL Server installation process	. 35
Adjustments after installing the SQL Server	
Installation of SQL Server Management Studio	. 49

This chapter contains additional documents regarding the basic Columbus requirements.

## 2.1 SQL Server installation process

This process describes the work steps indicating the recommended default values.

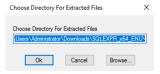
**Note** During the installation we recommend to accept the values proposed by the setup wizard unless otherwise described.

#### How to start the setup wizard

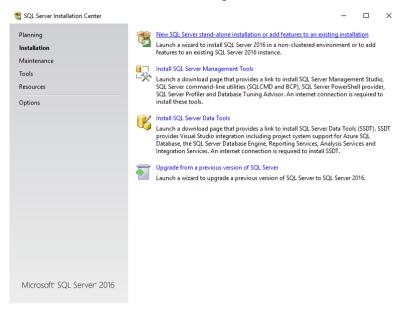
Start the setup file SQLEXPR\_x64\_ENU.exe as administrator.



> The installation files must be unpacked. Check the path and press OK.



After the setup wizard has been started, you can click on "New SQL Server stand-alone installation or add feature to an existing installation".



## 2.1.1 Product key

If not using a "free edition", use this dialog window to enter the license key.

> If required, enter a license key and click on **Next**.

🃸 SQL Server 2016 Setup		-		$\times$	
Product Key Specify the edition of SQL Server Product Key License Terms Global Rules Microsoft Updates Install Setup Files Install Setup Files Install Rules Feature Selection					
	< Back Next 3		Cance		

### 2.1.2 License terms

- > Read the license agreement.
- > Activate the checkbox and click on **Next**.

髋 SQL Server 2016 Setup		-		×
License Terms To install SQL Server 2016, you	must accept the Microsoft Software License Terms.			
Product Key License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Feature Configuration Rules Ready to Install Installation Progress Complete	MICROSOFT SOFTWARE LICENSE TERMS MICROSOFT SQL SERVER 2016 EXPRESS These license terms are an agreement between Microsoft Corporation (or base live, one of its affiliates) and you. Please read them. They apply to the software which includes the media on which you received it, if any. The terms also apply Microsoft  updates,  updates,  linternet-based services, and  supplements,  laccept the license terms. SQL Server 2016 transmits information about your installation experience, as well as of performance data, to Microsoft to help improve the product. To learn more about SQL processing and privacy controls, please see the <u>Privacy Statement</u> .	named to any C	above above	v ₽rint
	< Back Next >		Cance	

### 2.1.3 Global rules

Use this dialog window to check the generally necessary requirements for the installation of the SQL Server.

- > Click on **Show Details** to obtain more information on the individual checks.
- > Click on **Re-run** to recheck the requirements.
- > Make sure that all checks were successful and click on Next.

髕 SQL Server 2016 Setup		-		×
Global Rules				
Setup Global Rules identify pro corrected before Setup can cor	blems that might occur when you install SQL Server Setup support files. Failu inue.	ires must be		
Product Key	Operation completed. Passed: 9. Failed 0. Warning 0. Skipped 0.			
License Terms				
Global Rules				
Microsoft Update	Hide details <<			Re-run
Product Updates	View detailed report			
Install Setup Files				
Install Rules		atus		_
Feature Selection		sed		
Feature Rules		ssed		
Feature Configuration Rules	Restart computer Pas	sed		
Ready to Install	Windows Management Instrumentation (WMI) service Pas	sed		
Installation Progress	Consistency validation for SQL Server registry keys Pas	sed		
Complete	Long path names to files on SQL Server installation media	sed		
	SQL Server Setup Product Incompatibility Pas	sed		
	INET 2.0 and .NET 3.5 Service Pack 1 update for Windows 2008 Pas	sed		
	Sedition WOW64 platform	sed		
	< Back	Next >	0	ncel
	< Dack	Next >		incer

### 2.1.4 Microsoft update

Use this dialog window to define whether the installation wizard shall try to download the latest updates for this installation at Microsoft.

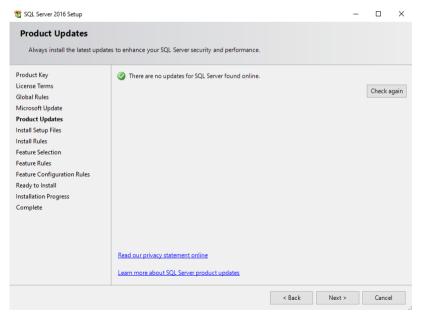
> Activate the checkbox and click on **Next**.

🐮 SQL Server 2016 Setup		-		×
Microsoft Update	for important updates			
Product Key License Terms Global Rules <b>Microsoft Update</b> Product Updates Install Setup Files Install Rules Feature Selection Feature Selection Feature Configuration Rules Ready to Install Installation Progress Complete	Microsoft Update offers security and other important updates for Windows and software, including SQL Server 2016. Updates are delivered using Automatic Up the Microsoft Update website. Use Microsoft Update to check for updates (recommended) <u>Microsoft Update FAQ</u> <u>Microsoft Update Privacy Statement</u>			sit
	< Back Nex	t >	Cancel	

### 2.1.5 Product updates

This dialog window displays any available updates.

- > Click on **Check again** to check again for any available updates.
- > If updates are available, activate the checkbox in order to consider them and click on Next.



### 2.1.6 Install rules

Use this dialog window to check the additionally necessary requirements for the installation of the SQL Server.

- > Click on **Show Details** to obtain more information on the individual checks.
- > Click on **Re-run** to recheck the requirements.
- Make sure that all checks have been completed with successful or warning status and click on Next.

🃸 SQL Server 2016 Setup			-		×
Install Rules					
Setup rules identify potential pr can continue.	oblems that might occur while running Setup. Failures must be correcte	d before Setup			
Product Key	Operation completed. Passed: 4. Failed 0. Warning 1. Skipped 0.				
License Terms					
Global Rules					
Microsoft Update	Hide details <<			Re-ru	un
Product Updates	View detailed report				
Install Setup Files					_
Install Rules	Rule	Status			_
Feature Selection	Superior Active Template Library (ATL)	Passed			
Feature Rules	Consistency validation for SQL Server registry keys	Passed			
Instance Configuration	Computer domain controller	Passed			
Server Configuration	Microsoft .NET Application Security	Passed			
Database Engine Configuration	Windows Firewall	Warning			
Feature Configuration Rules					_
Ready to Install					
Installation Progress					
Complete					
	< Back	Next >		Cancel	

### 2.1.7 Feature selection

Use this dialog window to define the features and the installation directories to be installed.

- > Select the two features "Database Engine Services" and "SQL Client Connectivity SDK".
- > Accept the default values of the installation directories and click on Next.

📸 SQL Server 2016 Setup			– 🗆 X				
Feature Selection Select the Express features to in	ıstall.						
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules <b>Feature Selection</b> Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Installation Progress Complete	Features: Instance Features □ Database Engine Services □ SQL Server Replication Shared Features □ SQL Client Connectivity SDK Redistributable Features		Feature description:         The configuration and operation of each instance feature of a SQL Server instances. SQL Server instances: and perate side-by-side on v         Server instances can operate side-by-side on v         Prerequisites for selected features:         Already installed:         Windows PowerShell 3.0 or higher         Kirrrooff: NFT Framework 4.6         V         Disk Space Requirements         Drive C: 1058 MB required, 36437 MB available				
	Select All Unselect All Instance root directory: Shared feature directory: Shared feature directory (x86):	C:\Program Files\Mi C:\Program Files\Mi C:\Program Files (x8					

Attention	At least the two features "Database Engine Services" and "SQL Client Connectivity SDK" must
	be installed.

## 2.1.8 Instance configuration

Use this dialog window to define the SQL instance to be installed.

> Accept the default values for the instance and click on **Next**.

髋 SQL Server 2016 Setup					-		×
Instance Configuration							
Specify the name and instance	ID for the instance of S	QL Server. Instance I	D becomes part of th	e installation path.			
Product Key	○ Default instance						
License Terms Global Rules	Named instance:	SQLExpress					
Microsoft Update							
Product Updates Install Setup Files	Instance ID:	SQLEXPRESS					
Install Rules							
Feature Selection Feature Rules	SQL Server directory:	C:\Program Files\N	licrosoft SQL Server\N	/ISSQL13.SQLEXPRESS			
Instance Configuration	Installed instances:						
Server Configuration	Instance Name	Instance ID	Features	Edition	Ver	sion	_
Database Engine Configuration							
Feature Configuration Rules Ready to Install							
Installation Progress							
Complete							
	1						
				Back Next	>	Cancel	

### 2.1.9 Server configuration

This dialog window contains the two tabs "Service Accounts" and "Collation".

The SQL Server and the SQL Browser service are defined in the "Service Accounts" tab.

Make sure that the SQL Server and the SQL Browser service are automatically set on the startup type.

	SQL Server 2016 Setup Server Configuration Specify the service accounts an	d collation configuration.			- 0	×
	Product Key License Terms Global Rules	Service Accounts Collation Microsoft recommends that ye	ou use a separate account for each S	QL Server servic	:e.	
	Microsoft Update	Service	Account Name	Password	Startup Type	
	Product Updates	SQL Server Database Engine	NT Service\MSSQL\$SQLEXPRESS		Automatic	~
	Install Setup Files	SQL Server Browser	NT AUTHORITY\LOCAL SERVICE		Automatic	~
	Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Ready to Install Installation Progress Complete		nt file initialization by avoiding zeroi y allowing deleted content to be acc			
			< Back	Next	> Canc	el:
ttention	The two services "So	OL Server Database	e Engine" and "SOL	Server E	Browser"	must be in

tomatically with the start type.

The collation of the database engine is defined in the "Collation" tab.

> Accept the default values and click on Next.

髋 SQL Server 2016 Setup		-		×
Server Configuration				
Specify the service accounts and	l collation configuration.			
Product Key License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Ready to Install Installation Progress Complete	Service Accounts         Collation           Database Engine:		ustomize.	
	< Back Next >		Cancel	

### 2.1.10 Database engine configuration

This dialog window contains the tabs "Server Configuration", "Data Directories", "TempDB", "User Instances" and "Filestream".

The authentication mode, the SA password and the membership to the SQL Server administrators group is defined in the "Server Configuration" tab.

- Set the authentication mode to "Mixed Mode (SQL Server authentication and Windows authentication)".
- > Enter the SA password in the fields "Enter password" and "Confirm password".
- Define all the desired users, groups and services as members of the SQL Server administrators group in "Specify SQL Server administrators".

髋 SQL Server 2016 Setup		-		×
Database Engine Confi	guration			
Specify Database Engine auther	ntication security mode, administrators, data directories and TempDB settings.			
Product Key License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Ready to Install Installation Progress Complete	BUILTIN\Administrators (Administrators)		ed access	
	Add Current User Add Remove			
	< Back 1	Next >	Cance	

## AttentionThe authentication mode must be set to "Mixed Mode (SQL Server authentication and Win-<br/>dows authentication)".

SQL directories are defined in the "Data Directories" tab.

> Accept the default values in the field "Data root directory".

> Enter the desired directories for the user databases and the database backup.

🐮 SQL Server 2016 Setup			-		×
Database Engine Config	guration				
Specify Database Engine authen	tication security mode, administr	ators, data directories and TempDB settings.			
Product Key	Server Configuration Data Dir	ectories TempDB User Instances FILESTREAM			
License Terms					
Global Rules	Data root directory:	C:\Program Files\Microsoft SQL Server\			
Microsoft Update	System database directory:	C:\Program Files\Microsoft SQL			
Product Updates		Server\MSSQL13.SQLEXPRESS\MSSQL\Data			
Install Setup Files	User database directory:	D:\SQL\Database			
Install Rules					
Feature Selection	User database log directory:	D:\SQL\Database			
Feature Rules	Backup directory:	D:\SQL\Backup			
Instance Configuration					
Server Configuration					
Database Engine Configuration					
Feature Configuration Rules					
Ready to Install					
Installation Progress					
Complete					
		< Back Next :	>	Cancel	

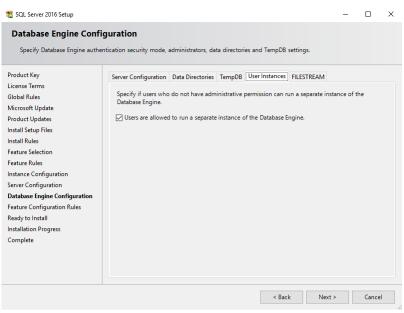
Enter the definitions for the temporary database of the SQL Server in the "TempDB" tab.

Accept the default values.

📸 SQL Server 2016 Setup		- □ >	×
Database Engine Config		administrators, data directories and TempDB settings.	
specify Database Engine autren	ication security mode,	auministrators, data directories and rempos settings.	
Product Key License Terms		Data Directories TempDB User Instances FILESTREAM	
Global Rules	TempDB data files:	tempdb.mdf	
Microsoft Update Product Updates Install Setup Files	Number of files: Initial size (MB):	8 Total initial size (MB): 8	
Install Rules	Autogrowth (MB):	64 💼 Total autogrowth (MB): 64	
Feature Selection Feature Rules	Data directories:	C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESS\N Add	
Instance Configuration		Remove	
Server Configuration Database Engine Configuration			
Feature Configuration Rules		< >	
Ready to Install	TempDB log file:	templog.ldf	
Installation Progress	Initial size (MB):	8	
Complete	Autogrowth (MB):	64	
	Log directory:	C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESS\N	
		< Back Next > Cancel	

The handling of non-administrative users and the SQL instance are defined in the "User Instances" tab.

#### Accept the default values.



The behavior of filestreaming and the transaction logfile are defined in the "Filestream" tab.

> Accept the default values and click on **Next**.

📸 SQL Server 2016 Setup				-	-		×
Database Engine Config Specify Database Engine auther	<b>guration</b> tication security mode, administrators,	data directories and 1	TempDB setting	js.			
Product Key License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Ready to Install Installation Progress Complete		-SQL access		TREAM			
			< Back	Next >		Cancel	

## 2.1.11 Ready to install

This dialog window shows the installation configuration as well as the file in which this configuration is stored.

> Check the configuration and click on the button Install to start the installation.

髋 SQL Server 2016 Setup	– 🗆 X
Ready to Install Verify the SQL Server 2016 feat	ures to be installed.
Product Key License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Server Configuration Rules <b>Ready to Install</b> Installation Progress Complete	Ready to install SQL Server 2016:            Summary <ul> <li>Edition: Express</li> <li>Action: Install (Product Update)</li> <li>Prerequisites</li> <li>Windows PowerShell 3.0 or higher</li> <li>Microsoft, NET Framework 4.6</li> <li>To be installed from media:</li> <li>Microsoft Visual Studio 2010 Redistributables</li> <li>General Configuration</li> <li>Features</li> <li>Database Engine Services</li> <li>Sol Client Connectivity SDK</li> <li>Rost AllFeatures, With Defaults</li> <li>Instance Name: SQLEXPRESS</li> <li>Instance Norme: SQLEXPRESS</li> <li>Instance ID:</li> </ul> <li>Configuration file path:</li> <li>C:\Program Files\Microsoft SQL Server\130\Setup Bootstrap\Log\20170316_100148\ConfigurationFile.ini</li>
	< Back Install Cancel

## 2.1.12 Installation progress

This dialog window shows the installation progress.

🐮 SQL Server 2016 Setup			-		×
Installation Progress					
Product Key License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Ready to Install Installation Progress Complete	Creating servicing cache folder.				
		Next >		Cancel	

### 2.1.13 Complete

This dialog window shows the installation process of the individual components.

Check that all components have been successfully installed and click on Close to exit the setup wizard.

Complete					
Your SQL Server 2016 install	ation completed successfully with product updat	tes.			
Product Key	Information about the Setup operation or p	possible next steps:			
License Terms	Feature	Status			~
Global Rules	Database Engine Services	Succeeded			- 11
Microsoft Update	SOL Browser	Succeeded			-
Product Updates	SOL Writer	Succeeded			
nstall Setup Files	SQL Client Connectivity	Succeeded			
nstall Rules	SQL Client Connectivity SDK	Succeeded			
eature Selection	Setun Sunnort Filer	Succeeded			`
Feature Rules					
	<b>D</b> + 1				
Instance Configuration	Details:				
Server Configuration					
Database Engine Configuration					
Feature Configuration Rules	Product Update:				
Ready to Install	Product Update has successfully appli	ed KB 3182545 < http://support.micro	osoft.com	?id=	
Installation Progress	3182545>. These updates have set the patch	level of the Setup operation to 13.1.4001.0.			
Complete					
	Summary log file has been saved to the foll	owing location:			
		-			
	C:\Program Files\Microsoft SQL Server\130 x64_20170316_100148.txt	V\Setup Bootstrap\Log\20170316_1001	48\Summa	r <u>y srv-20</u>	<u>16-</u>
	X04 20110010 100140.00				
	<u>104 20110310 100140.00</u>				

## 2.2 Adjustments after installing the SQL Server

This procedure describes the work steps that must be carried out to adjust the SQL Server so it is ready for the Columbus installation.

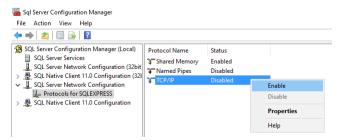
### 2.2.1 SQL Server configuration

The SQL Server must be adjusted.

> Start the SQL Server Configuration Manager.

=		Microsoft SQL Server 2016 ^ ^
	2	Deployment Wizard New
	*	Microsoft SQL Server Manageme
		Reporting Services Configuration New
		SQL Server 2016 Configuration

> Activate the TCP/IP protocol using the context menu.



Attention

#### The TCP/IP protocol must necessarily be activated.

> We recommend to adjust the TCP/IP settings using the context menu.

Sql Server Configuration Manager File Action View Help ← ➡			
SQL Server Configuration Manager (Local)           SQL Server Services           J. SQL Server Network Configuration (32bit)           SQL Server Network Configuration (32bit)           J. SQL Server Network Configuration (32bit)           L. Protocols for SQLEXPRESS           P. Native Client 11.0 Configuration           L. Protocols for SQLEXPRESS           P. Native Client 11.0 Configuration	Protocol Name Shared Memory Named Pipes TCP/IP	Status Enabled Disabled Enabled	Enable Disable
			Properties
			Help

- Move to the IP Addresses tab.
- > The field "TCP Dynamic Ports" must be empty.
- > Enter the value 1443 in the field "TCP Port".
- > Confirm the modifications with **OK**.

10	tocol	IP Addresses			
	TCP [	Dynamic Ports		0	^
	TCP P	Port			
Ξ	IP4				
	Activ	-		Yes	
	Enab	oled		No	
	IP Ac	ldress		127.0.0.1	
	TCP I	Dynamic Ports		0	
	TCP I	Port			
Ξ	IP5				
	Activ	-		Yes	
	Enat			No	
		idress		fe80::5efe:192.168.1.103%	4
		Dynamic Ports		0	
	TCP F				
Ξ	IPAII				
		Dynamic Ports			_
	TCP I	Port		1433	
		namic Ports f dynamic port:	are not ena	ibled. To use dynamic ports	, set to 0.

Important	We recommend to use the SOL Server with the static port 1433.
-----------	---

- > Restart the SQL Server service using the context menu.
- > Then, restart the SQL Server browser using the context menu.

🚟 Sql Server Configuration Manager				
File Action View Help				
🗢 🔿 🙍 🖪 🗟				
SQL Server Configuration Manager (Local)	Name	State	Start Mode	Log (
SQL Server Services	SQL Server (SQLEXPRESS)	Running	Automatic	NT S
SQL Server Network Configuration (32bit		Stopped	Other (Boot, Syste	NT A
<ul> <li>SQL Native Client 11.0 Configuration (32</li> <li>SQL Server Network Configuration</li> </ul>	t 🖏 SQL Server Browser	Running	Automatic	NT A
<u>u</u> Sol server Network Configuration				
SQL Native Client 11.0 Configuration				

## 2.2.2 Configuration of Windows Firewall

The Windows Firewall must be adjusted in order to be able to access the SQL Server through the network.

> Open the Windows Firewall in the submenu of the incoming connections.

🔗 Windows Firewall with Advance	d Security								
File Action View Help									
🔶 🍬 🙇 📰 🗟 🖬									
Pindows Firewall with Advance	Inbound Rules								
🗱 Inbound Rules 🕵 Outbound Rules	Name	Profile	Enabled	Action	Program	Protocol	Local Port	Local Addr	Remote Addr
Connection Security Rules	🔮 SQL Server	All	Yes	Allow	Any	TCP	1433	Any	Any
> 🐱 Monitoring	🔮 SQL Server Browser	All	Yes	Allow	Any	UDP	1434	Any	Any

- > Create a new rule with the title SQL Server.
- > The rule must have been activated.
- > The port (default would be 1433) for the TCP protocol must have been defined.

rotocols and Ports Scope Advanced Local Principals Remo	ote Users (	General		Programs	and Services	s Rem	ote Computers
General Programs and Services Remote Comp	uters Proto	cols and	d Ports	Scope	Advanced	Local Principals	Remote Use
General Name: Soll Server SOLDXPRESS Description:	, Pr	S F	and ports Protocol ty Protocol nu Local port: Remote po ntermet Co (CMP) sett	imber: int:	All Ports	: 80, 443, 5000-50 : 80, 443, 5000-50	110
O Block the connection				-			

- > Create a new rule with the title SQL Server Browser.
- > The rule must have been activated.
- > The port (default would be 1434) for the UDP protocol must have been defined.

	Scope	Advanced	Local Principals	Remote Users	General	Program	is and Services	s Remot	e Computers
General	Programs	and Services	Remote	e Computers	Protocols and Por	ts Scope	Advanced	Local Principals	Remote Use
	on: oled	ion ion if it is secure		>	Proto Loca Remu	oorts col type: col number:   port: ote port: ote port: et Control Mes 2) settings:	Specific 1434 Example: All Ports Example:	17 ↓ Pots 80, 443, 5000-5010 80, 443, 5000-5010	~ )
	the connect	tion							
		ion							
		ion							

Attention	The configured ports for the SQL Server and the SQL Server browser must have been neces-
	sarily enabled for incoming connection.

## 2.3 Installation of SQL Server Management Studio

This procedure describes the work steps to be carried out to install SQL Server Management

	Studio.
Note	We recommend to install SQL Server Management Studio on the Columbus server.
	How to start the setup wizard
	<ul> <li>Start the setup file NewSSMS-Setup-ENU.exe as administrator.</li> <li>NewSSMS-Setup-ENU</li> <li>NewSSMS-Setup-ENU</li> <li>SQLEXPR_x64_ENU</li> <li>Run as administrator</li> </ul>
	Start the installation process by clicking once on "Install".
	RELEASE 16.5.3     Microsoft SQL Server Management Studio
	Welcome. Click "Install" to begin.
	By clicking the "Install" button, I acknowledge that I accept the <u>License Terms</u> and <u>Privacy Statement</u> .
	SQL Server Management Studio transmits information about your installation experience, as well as other usage and performance data, to Microsoft to help improve the product. To learn more about SQL Server Management Studio data processing and privacy controls, see the privacy statement link above.

> The installation process runs to the end by itself.

Install

> When installation is completed, exit the setup wizard by clicking on "Close".

Close

RELEASE 16.5.3 Microsoft SQL Server Management Studio	-
Setup Completed	
All specified components have been installed successfully.	
Close	