

Exact Synergy

# User Guide

# Implementation

502

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# INTRODUCTION

To continue our commitment to satisfy customer demands, we are introducing this **Implementation Manual**. Software implementation is often associated with a high degree of uncertainty and a significant impact on the daily operations of a company. It is our hope that this manual will assist in alleviating the uncertainties and revealing the expectations of the implementers and customers by providing detailed descriptions on installation and other configuration topics. This manual is not intended to replace the need for proper Exact Synergy Enterprise training; but rather, it should be used as a reference after the user or implementer has been trained on Exact Synergy Enterprise.

In addition to the manual, we will continue to provide updated documents on the software that will be made available online via the customer and reseller portals. To stay current, we still recommend that implementers and users check for the latest developments and documentation changes regularly via the appropriate portals.

While each implementation is unique, it is our hope that the manual will provide ongoing support in a single-document reference. We have endeavored to ensure that the information and content provided is as current as possible.

We are dedicated to helping you improve your return on investment by taking full advantage of Exact Synergy Enterprise and/or other Exact products. We hope that you will find the **Implementation Manual** useful and we welcome any feedback you may have.

# 1. IMPLEMENTATION PROJECT APPROACH

Can you expect success in business without a well-defined organizational structure? Can you expect success without integrating the knowledge and people that are scattered around your organization and then making full use of them?

Maximizing the potential of the people available in the organization is crucial to business success. It is therefore essential that the organization involved is well-structured before implementing any system. An organization that is not well-structured in the beginning will likely remain that way later. Fortunately, preliminary studies before implementation can be performed to identify the inefficiencies in the organization structure and internal communication.

While no two implementations are exactly the same, the project structure is however consistent across all implementations for different companies.

## 1.1 COMMITMENT TO IMPROVE

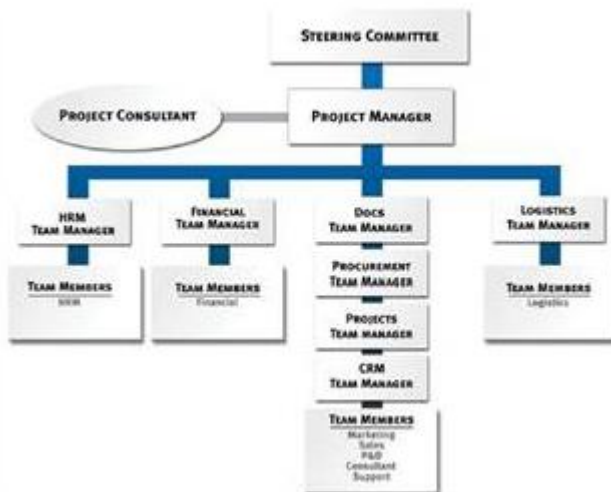
Believing that a project, like implementing Exact Synergy Enterprise, will bring improvements is the first step to any successful project implementation. The stronger the belief means the stronger the commitment to implement the project, and hence, the greater the likelihood of success.

In the past, process-improvement initiatives were viewed as projects that brought intangible benefits, and organizations tend to be less interested in such long-term projects that produced intangible benefits.

However, the current view point is that business processes play a key role in added value delivered by the company. Therefore, a process-improvement initiative, like implementing Exact Synergy Enterprise, is viewed as essential.

Organization-wide changes must be initiated top-down. While many organizations, with the forward-looking business vision, have accepted such changes as their way of life, there are still organizations struggling with having a mission statement on process improvement.

In progressive organizations, every functional department is responsible and committed to improving its individual departmental process. The functional departments have the best knowledge of their respective departmental processes and therefore they must take on the responsibility to continuously look for ways to improve their processes for the betterment of the entire company.



The first sign of a successful implementation is the commitment to create a dedicated project team comprising a high-level steering committee and implementation team. The implementation team must include management team leaders who are experts in the processes and functional departments (sales, finance, HR, manufacturing, marketing, engineering, purchasing, et cetera). Together with the working team members, they represent the functional departments in the project.



## 1.2 PROJECT-BOOK APPROACH

A project book is maintained throughout the implementation of Exact Synergy Enterprise to:

- ensure the success of the project,
- reduce the risks involved,
- ensure accountability and procedural consistency, and
- define the scope of the project.

## 1.3 KEY SUCCESS FACTORS

The key success factors in implementing Exact Synergy Enterprise include:

- proper process management,
- well-defined roles and responsibilities,
- efficient communication,
- strong commitment from the top management,
- setting of realistic achievable goals,
- providing thorough training,
- avoiding filtered information, and
- willingness to accept change.

## 1.4 PROJECT TEAM

A successful project team should comprise of a steering committee, project manager, managerial team leaders, and end users, of which all are internal people of the company.

### 1.4.1 Steering committee

The steering committee is represented by the top management executives of the company. The committee is not involved in the low-level operating issues of the implementation but makes high-level decisions relating to business issues of the implementation.

The steering committee oversees and is responsible for the progress of individual project components and hence the process of the overall project. It must be ever ready to act to ensure that the project advances until completion. It must be decisive and specific when the implementation team needs certain directions. The committee also assures the project team of the commitment from top management by resolving issues relating to people constraints and conflicts with company policies, and hence, assuring that the project is a priority of the company.

### Responsibilities

The responsibilities of the steering committee include, but are not limited to, the following:

- defining the overall project goal,
- providing a strategic vision,
- introducing the project to the organization,
- ensuring sufficient people are available,
- empowering the implementation team and holding them accountable,
- delegating to the project manager the authority to make decisions,
- approving and supporting the implementation plan,
- ensuring no conflicts with other company priorities,
- making the go-or-no-go decisions on whether to continue with the project, and
- reviewing and monitoring the progress in terms of deadlines and budgets.

### Suitable candidate

The steering committee must assume the roles of:

- Visionary planners,
- Chief executive officers, and
- Hands-off advisors.

The steering committee members must be willing to devote an average of five to 10 percent of their time each week to implementing the project.

## 1.4.2 Project manager

A project manager plays the most important role in a project. This person must have a good grasp of the complexity and intricacy of the overall project requirements. He or she must also be able to coordinate among the team members and lead them to achieve the overall team's objective.

### Responsibilities

The responsibilities of the project manager include, but are not limited to, the following:

- project planning, organizing, and control,
- maintaining and scheduling project activities,
- conducting team meetings and resolving issues,
- allocating people,
- securing people required for the project,
- coordinating the activities of the implementation team,
- serving as a liaison person to top management and external consultants,
- chairing coordination and status meetings, and
- keeping the steering committee informed.

### Suitable candidate

A suitable candidate for the project manager position must at least have:

- high vested interest in (for example, will benefit a lot from) the project,
- project management skills,
- excellent organizing capability,
- sufficient time to coordinate the project, and
- good overall understanding of the business.

The person selected must be willing to devote an average of 40 to 50 percent of his or her time each week to implementing the project.

### 1.4.3 Management team leaders

The management team leaders are the managers or representatives from the functional departments. They get involved in reviewing the current procedures, proposing possible changes to them, and documenting the actual changes. The team leaders also get involved in assigning responsibilities and in the post-project training of their team members.

#### Responsibilities

The responsibilities of a team leader are confined to the functional department concerned and they include, but are not limited to, the following:

- ensuring the progress of the implementation within the functional department,
- defining the project goals for the functional department,
- determining requirements and availability of people,
- addressing interdepartmental issues and conflicts,
- learning the implemented software system,
- reviewing/revising related information and process flows,
- appointing a backup team leader, and
- cooperating with and following the guidance of the project manager.

#### Suitable candidate

A suitable candidate for the team leader position must at least be:

- a managerial-level user of Exact Synergy Enterprise,
- having high vested interest in (for example, will benefit a lot from) the project,
- determined to complete the implementation,
- aware of the benefits of implementing Exact Synergy Enterprise,
- able to communicate the project benefits to fellow co-workers,
- able to devote time and effort to the implementation process,
- an expert in the functional area, and
- a catalyst of change.

The persons selected must be willing to devote about 20 to 25 percent of their time each week to implementing the various stages of the project.

#### 1.4.4 End users

End users are employees who will be working with Exact Synergy Enterprise on a daily basis after the implementation. The end users need to be thoroughly trained, as they are at the front-line working on the departmental processes and hence, use Exact Synergy Enterprise the most.

#### Responsibilities

The responsibilities of end users include, but are not limited to, the following:

- reporting to team leaders on any problems, issues, or concerns encountered relating to the processes and workflows,
- adapting to and using new processes and workflows through Exact Synergy Enterprise, and
- becoming proficient in using, and be familiarized with, all the functionalities of Exact Synergy Enterprise so that daily processes are handled accurately, promptly, and efficiently.

#### Suitable candidate

A suitable candidate for the role of the end user must be someone who is capable of:

- being a primary user of the system, and
- handling routine tasks on a daily basis.

End users involved must be willing to devote an average of 10 to 15 percent of their time each week to implementing the various stages of the project.

#### Additional employees

During the implementation, it is often necessary to hire additional temporary employees. These additional employees are usually needed for entering data into the system, such as those for customers and items. They must be guided and supervised during the data entry process. The team leaders are the ones accountable for the accuracy and completeness of the work.

At the stage of assigning responsibilities and tasks, the project consultant from Exact is involved to ensure that the employees are allocated their duties and that they have the necessary skills for them.

## 1.5 PROJECT IMPLEMENTATION STAGES

### 1.5.1 Kickoff meeting



A meeting is necessary to start or kick off the project. The kickoff meeting formally starts the implementation process. It is vital in establishing a strong foundation for the entire project. During this meeting, the project manager and management team affirm the objectives and expectations of the project, and also the implementation schedule.

Once everyone involved has a clear understanding of the project, the Exact project consultant, together with the project team of the company, will devise a comprehensive implementation plan. The plan must include a precise project schedule, allocation of people, and assignment of responsibilities to individual project members.

Topic	Item
Objectives	Demonstrate system overview Explain the Exact Synergy Enterprise methodology Review the key success factors Define the roles and responsibilities Develop the project plan Develop the communication plan
Who should be involved?	The steering committee Project manager Management team All the Exact Synergy Enterprise users
Deliverables	Project kickoff PowerPoint presentation Meeting agenda Project team organization chart Project book
Duration	Approximately two to four hours

## 1.5.2 Planning and business analysis



After the kickoff, the next stage is planning and business analysis.

Topic	Item
Objectives	Identifying critical business issues Reviewing front-office business operations Documenting current business processes Defining goals Defining implementation strategy Revisiting project plan
Who should be involved?	The steering committee Project manager Management team
Deliverables	Critical business issues Documents on current business processes Task list Project book
Duration	Approximately three to four days

### 1.5.3 Setup and piloting



At this stage, the project manager, management team, and key decision makers should be present. The Exact project consultant will advise the key decision makers on the Exact Synergy Enterprise setup and work flow that affect the company. The management team will gain a better understanding of the functionalities of the software. They can then decide together with the project consultant on how the company will be using Exact Synergy Enterprise.

Topic	Item
Objectives	Complete file setup and training Complete defining and settings of pilot modules and training Complete process flow training and piloting setup Assign management team with data input
Who should be involved?	Project manager Management team Key decision makers
Deliverables	Exact Synergy Enterprise process flows Critical business issues Formal sign-off Project book
Duration	Approximately 10 days



### 1.5.4 End user training



At this stage, the main focus is to train the end users in the functional departments through interactive hands-on training sessions of Exact Synergy Enterprise. The emphasis is on the Exact Synergy Enterprise process flows designed during the setup and piloting stage. The project manager and team leaders are required to be present to provide the necessary interaction between the project team and the end users.

Topic	Item
Objectives	Training end users on business processes Resolving any arising issues Testing data input accuracy
Who should be involved?	Project manager Management team End users
Deliverables	Exact Synergy Enterprise process flows Project book
Duration	Approximately five to six days

### 1.5.5 30-day follow-up



A meeting is held to review the project progress to-date and to ensure compliance and effectiveness of procedures introduced. At this time, all outstanding issues will be discussed and resolved.

During the implementation, the primary contact person for the company has been the Exact project consultant. From this point onward, the company will be served by the support and sales personnel from Exact. This transition of support service will be discussed with the project manager and management team.

Topic	Item
Objectives	Addressing outstanding issues Ensuring compliance and effectiveness of procedures Introducing the Support and Sales team from Exact
Who should be involved?	Project manager Management team
Deliverables	Handover letter Project book
Duration	Approximately one day

## 2. TECHNICAL IMPLEMENTATION

Exact Synergy Enterprise is installed to run as an application server on a web server while the data is stored in a Microsoft SQL database. The application server and the database server can reside on the same server hardware or separately depending on scalability requirements.

### 2.1 SOFTWARE REQUIREMENTS

#### 2.1.1 Application and database servers

The following are the supported requirements for the application and database servers:

- Microsoft Windows Server 2012/2012R2, 2016, 2019, and 2022.
- Microsoft .NET Framework version 4.7 should be installed.
- WCF Data Services 5.0 should be installed.
- Microsoft SQL Server 2014, 2016, 2017, 2019, or 2022.
- Microsoft Office 2016, 2019, 2021, or 32-bit 365 ProPlus.
- Microsoft Exchange Server 2010, 2013, 2016, and 2019, and Microsoft Exchange Online.
- Microsoft Edge, Mozilla Firefox, Google Chrome, or Safari (only for the MAC operating system, and is not fully supported for tablets).
- Microsoft SQL TDE is supported.

Microsoft Office is required on the application server that runs some of the background jobs. Microsoft Edge is required in order to access Exact Synergy Enterprise for initial setup and maintenance. You can download and install Microsoft .NET Framework version 4.7 from the Microsoft web site.

The recommended system requirements are Microsoft Windows Server 2016, WCF Data Services 5.0, Microsoft SQL Server 2019, Microsoft Office 2019, and Microsoft Exchange Server 2019.

The customer must provide all the required licenses for the application server and database software.

**Tip:**

Exact Synergy Enterprise can be integrated with Microsoft Exchange Server 2010, 2013, 2016, or 2019. Microsoft Exchange 2016 with the latest service pack is recommended. However, it is not required to be installed on the web server.

## 2.1.2 Client workstations

The following are the supported requirements for the client workstations to access Exact Synergy Enterprise:

- Microsoft Windows 10, or 11.
- Microsoft Edge
- Mozilla Firefox, Google Chrome, or Safari (only for the MAC operating system and is not fully supported for tablets)
- Display resolution of 1024 x 768 pixels
- Microsoft Office 2016, 2019, 2021, and 32-bit 365 ProPlus

Microsoft Office is required in order to use the Microsoft Office integration feature of Exact Synergy Enterprise.

The recommended system requirements are Microsoft Windows 10, Microsoft Edge, Microsoft Office 2019, and a screen resolution of 1280 x 1024.

**Tip:**

For mobile users, any mobile phone that has Internet browsing capabilities can be used to access specific functionalities in Exact Synergy Enterprise that have been developed for mobile use.

## 2.2 NETWORK REQUIREMENTS

The connection between client workstations and the application server can be established using standard TCP/IP internet protocol through a local area network (LAN) or a global infrastructure like the Internet.

**Note:**  
Internet connection is mandatory for Exact Synergy Enterprise.

### 2.2.1 Connection speed

Although lower connection speeds do not affect application integrity, the client workstation requires at least a 56.6 Kbps connection to Exact Synergy Enterprise for acceptable performance.

If the application server is separate from the database server, the application server should be connected to the database server with a 100 Mbps LAN connection.

### 2.2.2 Network security

One of the greatest strength of the Internet is that it is based on open technology. However, the Internet and its related applications are generally considered as insecure due to this open nature. Therefore, a number of strict security policies must be maintained when implementing Exact Synergy Enterprise in order to protect both the application software and the data from malicious acts.

Total system security involves numerous security measures, each of which performs its own tasks to meet certain security requirements. These security measures are not confined to protecting the Exact Synergy Enterprise application but also the integrity of every element in the system.



Since the Exact Synergy Enterprise data traffic from the client workstation to the application server and database server is vulnerable, the entire data traffic path, from data sources to data destinations and data storage has to be protected. To provide the security needed, HTTPS (Hypertext Transmission Protocol, Secure) should be used for data encryption. Firewalls should also be installed to separate the Local Area Networks (LAN), the Demilitarized Zone (DMZ), and the Internet.

## 2.3 SERVER HARDWARE REQUIREMENTS

Exact Synergy Enterprise requires an application server (IIS with Exact Synergy Enterprise) and a database server (Microsoft SQL Server and database). Both servers can reside on a single machine or separate machines, depending on the required scalability. As Exact Synergy Enterprise is scalable up to thousands of users, the actual hardware requirements are determined by the specific needs of individual customers.

In order to ensure acceptable performance, the servers must have minimum configurations capable of serving all concurrent client workstations. Using server hardware that exceeds the minimum requirements improves the application performance.

### 2.3.1 Up to 50 concurrent connections

For a small Exact Synergy Enterprise implementation to serve up to 50 concurrent connections, both the application server and database server can reside in the same machine.



Scenario: Single server setup

#### Single application and database server machine

Hardware	Recommended	Minimum
Processor	2 x Dual Core Intel Xeon (2.4 GHz)	1 x Pentium 4 (3.4 GHz)
Memory	4 GB	1 GB
Hard disk	3 x SCSI 72 GB (RAID 5)	1 x IDE 30 GB

### 2.3.2 Up to 150 concurrent connections

When more connections are required or a large database size is expected, the IIS web server should be installed on a separate machine capable of handling up to 150 concurrent connections. The resulting setup is one machine for the application server (IIS with Exact Synergy Enterprise) and another machine for the database server.

**Note:**

The client workstation communicates only with the application server.



Scenario: Dual-server setup

#### Application server machine

Hardware	Recommended	Minimum
Processor	2 x Dual Core Intel Xeon (2.4 GHz)	1 x Pentium 4 (3.4 GHz)
Memory	2 GB	1 GB
Hard disk	2 x SCSI 18 GB (RAID 1)	1 x IDE 6 GB

#### Database server machine

Hardware	Recommended	Minimum
Processor	2 x Dual Core Intel Xeon (2.4 GHz)	1 x Pentium 4 (3.4 GHz)
Memory	2 GB	1 GB
Hard disk	5 x SCSI 72 GB (RAID 5)	1 x SCSI 50 GB

### 2.3.3 More than 150 concurrent connections

If more than 150 concurrent connections are required, the workload of the application server can be shared among several machines for improved reliability and performance. A load balancer can be used to proportionate data traffic among the application server machines, each of which is capable of serving up to 50 or more concurrent connections. All these clients are connected to a single centralized database server for data storage and retrieval.



Scenario: Multi-server setup

#### Each application server machine

Hardware	Recommended	Minimum
Processor	X64 server based processor	X86 & X64 processor
Memory	4 GB for IIS or more	2 GB for IIS
Hard disk	RAID 1 for redundancy	Single disk

#### Load balancer

Dedicated load balancers, such as the Foundry Server Iron Load Balancer (8 ports) can be used to balance the application server load. Microsoft Windows Server 2008 R2 also provides the Microsoft Windows Network Load Balancing service that is built into the operating system.



## 2.4 WINDOWS SERVER 2012 COMPATIBILITY

Since Windows Server 2012 is available, some organizations may choose to upgrade their servers to run on this new operating system. Windows Server 2012 offers new and improved features that organizations can take advantage of. These features include:

- Web — Improved features, such as Internet Information Services (IIS) 8.0, which allows more efficient and effective delivery of web-based experiences.
- Virtualization — With the availability of server virtualization technology, servers are easily scalable. This helps to reduce costs, increase hardware utilization, and optimize available infrastructure.
- Security — Enhanced security services, including Network Access Protection feature, which helps to keep the network and data safe.
- Reliability — Enhanced features, such as fail over clustering and next generation networking capabilities that helps to increase server reliability.

### 2.4.1 Windows Server 2012 and Exact Synergy Enterprise

To ensure that Exact continues to support organizations that choose to upgrade to Windows Server 2012, efforts have been carried out to ensure that Exact Synergy Enterprise is able to run on Windows Server 2012.

Exact Synergy Enterprise has taken advantage of certain features available in Windows Server 2012 to enhance its offerings. These include:

- the support of 64-bit architecture,
- the support of IPAM, and
- the availability of Internet Information Services (IIS) 8.0.

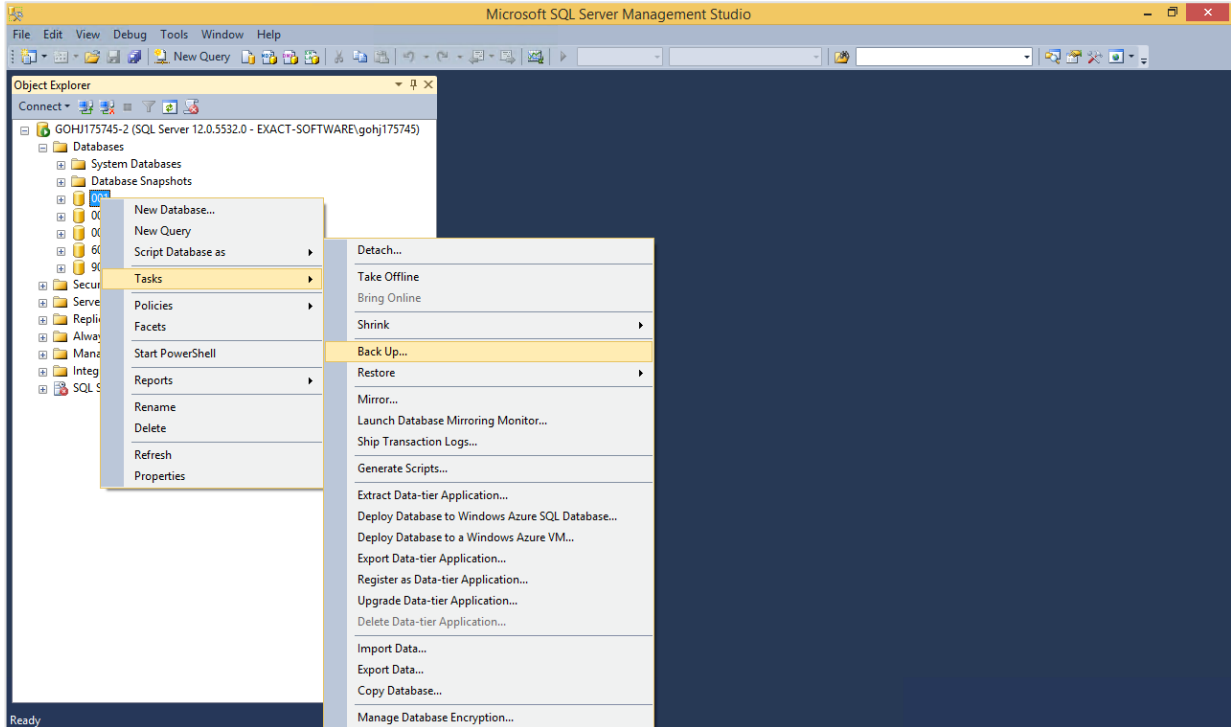
### 2.4.2 Installing Exact Synergy Enterprise on Windows Server 2012 platform

In order to install Exact Synergy Enterprise on a 64-bit Windows Server 2012 machine, a fresh installation is required. The recommended steps when installing Exact Synergy Enterprise on a Windows Server 2012 machine are as follows:

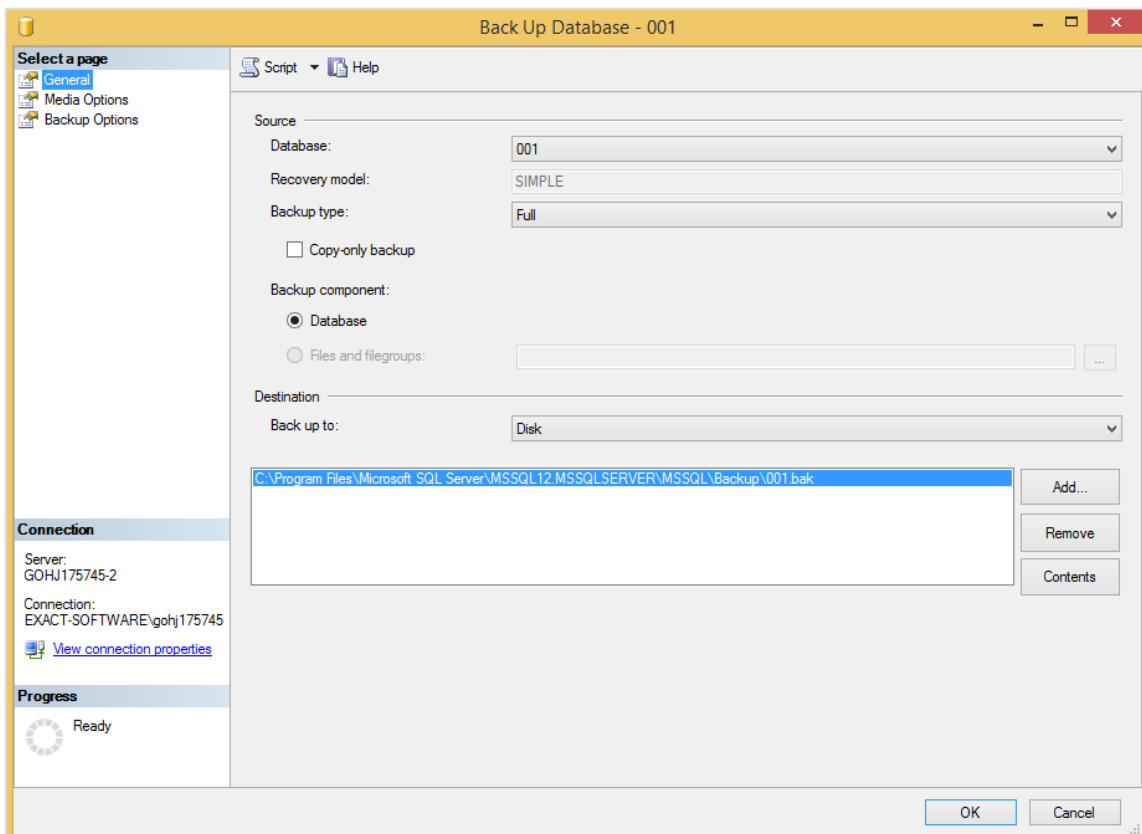
1. Back up the database of an existing Exact Synergy Enterprise installation, if previously installed on a 32-bit machine.
2. Install the appropriate components on the Windows Server 2012 platform and other related applications, namely the application server, web server, Microsoft .NET Framework version 4.7, and Microsoft Exchange Server 2013.
3. Download and install Exact Synergy Enterprise on the Windows Server 2012 machine.
4. Restore the Exact Synergy Enterprise database on the 32-bit Windows Server 2012 machine.

### To back up databases:

5. Start the **SQL Server Management Studio**.
6. Right-click on the database that you want to backup, select **Tasks**, and then click **Back Up...**



7. Specify the appropriate backup destination under the **Destination** section, if required.



8. Click **OK** to begin the backup process.

**To install the appropriate components on the Windows Server 2012 platform and other related applications:**

Prepare the machine for the Windows Server 2012 installation.

Apart from Windows Server 2012, the required systems to run Exact Synergy Enterprise include:

- the application server role,
- the Internet Information Services or Web server (IIS) role,
- Microsoft .NET Framework version 4.7, and
- Microsoft Exchange Server 2013.

To install and set up Windows Server 2012, see *Installing Windows Server 2012* from the Microsoft web site at <https://technet.microsoft.com/en-us/library/jj134246.aspx>.

To install and set up the application server and web server (IIS) 8.0 server roles, see *2.6.1 Installing and setting up application server and web server (IIS) server roles*.

Microsoft .NET Framework version 4.7 must be installed before installing Exact Synergy Enterprise. If the operating system that you are running on does not have the Microsoft .NET Framework version 4.7 preinstalled, you can download it from the Microsoft web site. To install, see *2.6.2 Installing Microsoft .NET Framework version 4.7*.

To install Microsoft SQL Server 2016, see *2.7 Setting Up Database Servers*.

For Exact Synergy Enterprise to run on Windows Server 2012, Windows Exchange Server 2013 is recommended. To install Windows Exchange Server 2013, see the related Microsoft Windows documentation at [https://technet.microsoft.com/en-us/library/bb124558\(v=exchg.150\).aspx](https://technet.microsoft.com/en-us/library/bb124558(v=exchg.150).aspx).

**Caution:**

It is possible that Windows Exchange Server 2013 has to be installed and executed from a separate machine. Consult Exact executives for further clarification, if required.

## 2.5 WINDOWS SERVER 2016 COMPATIBILITY

Since Windows Server 2016 is available, some organizations may choose to upgrade their servers to run on this new operating system. Windows Server 2016 offers new and improved features that organizations can take advantage of.

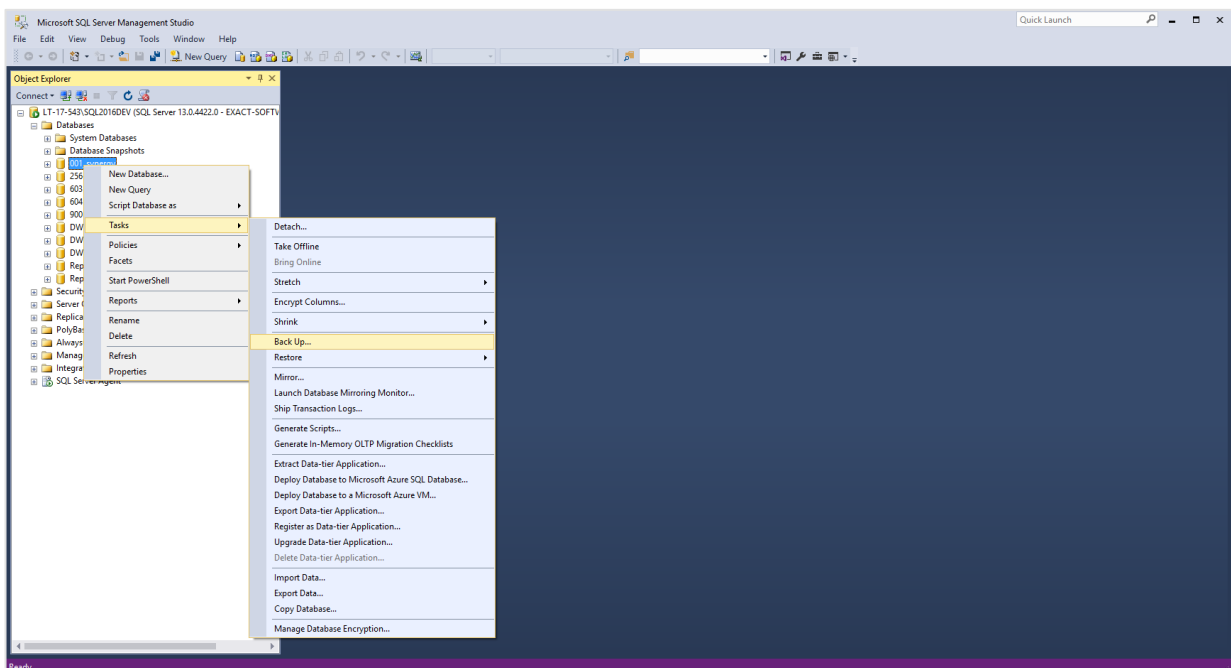
### 2.5.1 Installing Exact Synergy Enterprise on Windows Server 2016 platform

In order to install Exact Synergy Enterprise on a Windows Server 2016 machine, a fresh installation is required. The recommended steps when installing Exact Synergy Enterprise on a Windows Server 2016 machine are as follows:

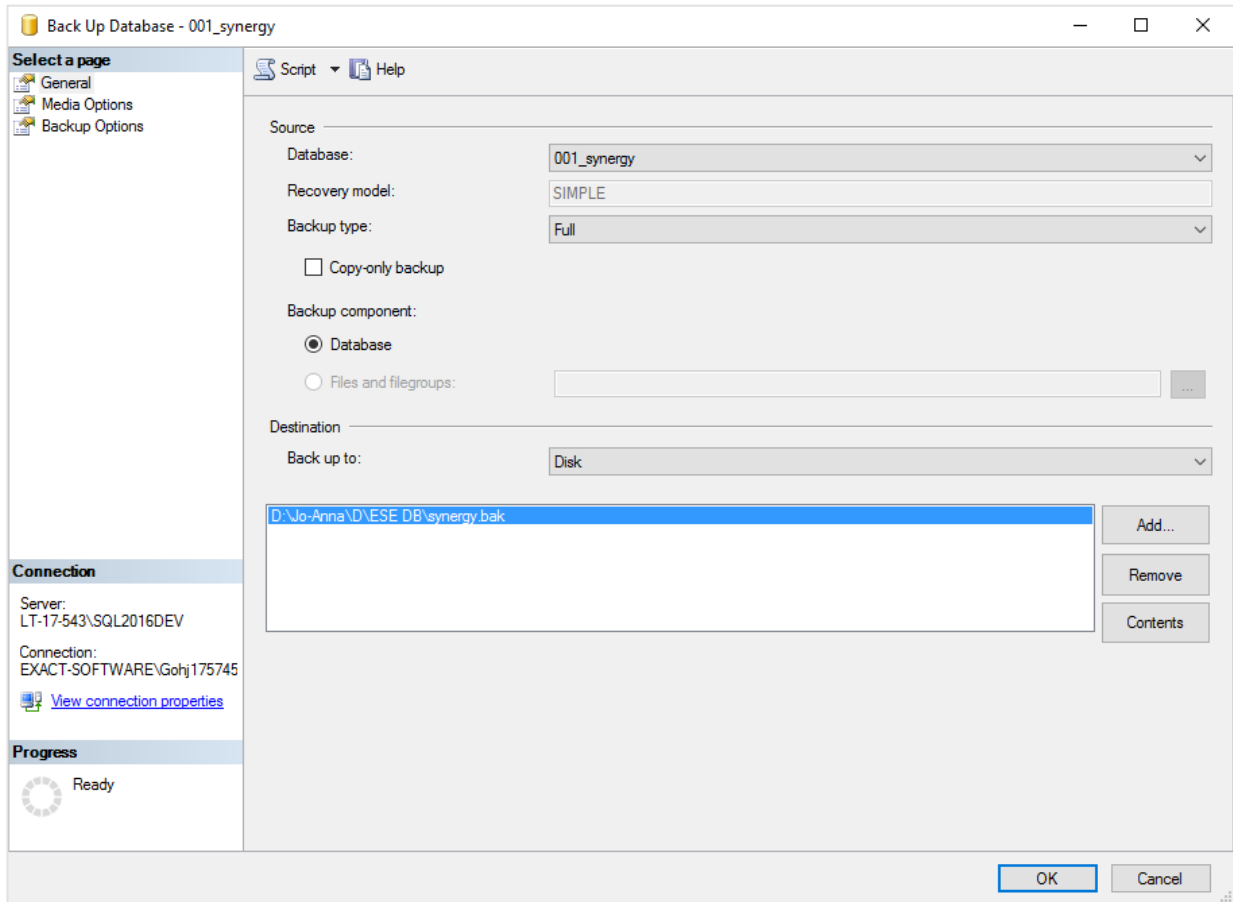
1. Back up the database of an existing Exact Synergy Enterprise installation.
2. Install the appropriate components on the Windows Server 2016 platform and other related applications, namely the application server, web server, Microsoft .NET Framework version 4.7, and Microsoft Exchange Server 2013.
3. Download and install Exact Synergy Enterprise on the Windows Server 2016 machine.
4. Restore the Exact Synergy Enterprise database on the Windows Server 2012 machine.

#### To back up databases:

1. Start the **SQL Server Management Studio**.
2. Right-click on the database that you want to backup, select **Tasks**, and then click **Back Up...**



- Specify the appropriate backup destination under the **Destination** section, if required.



- Click **OK** to begin the backup process.

### To install the appropriate components on the Windows Server 2016 platform and other related applications:

Prepare the machine for the Windows Server 2016 installation.

To install and set up Windows Server 2016, see *Installing Windows Server 2016* from the Microsoft web site at <https://gallery.technet.microsoft.com/Step-By-Step-Install-e78aea4e>.

To install and set up the application server and web server (IIS) 8.0 server roles, see *2.6.1 Installing and setting up application server and web server (IIS) server roles*.

Microsoft .NET Framework version 4.7 must be installed before installing Exact Synergy Enterprise. If the operating system that you are running on does not have the Microsoft .NET Framework version 4.7 preinstalled, you can download it from the Microsoft web site. To install, see *2.6.2 Installing Microsoft .NET Framework version 4.7*.

To install Microsoft SQL Server 2016, see *2.7 Setting Up Database Servers*.

For Exact Synergy Enterprise to run on Windows Server 2016, Windows Exchange Server 2013 is recommended. To install Windows Exchange Server 2013, see the related Microsoft Windows documentation at [https://technet.microsoft.com/en-us/library/bb124558\(v=exchg.150\).aspx](https://technet.microsoft.com/en-us/library/bb124558(v=exchg.150).aspx).

## 2.6 APPLICATION SERVERS AND WEB SERVERS (IIS)

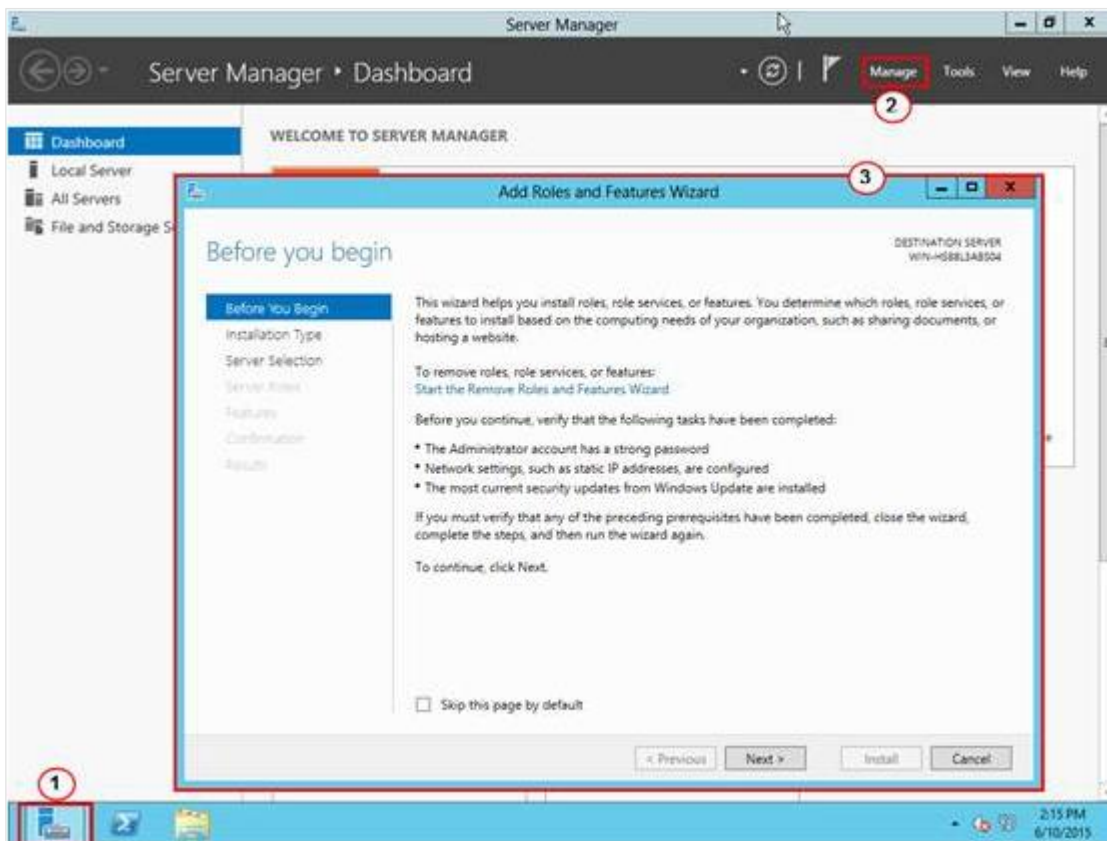
Application server and web server (IIS) server roles are included in all editions of Microsoft Windows Server 2012 and 2016. However, for security reasons, they are not preinstalled by default. You will need to manually install both the application server and IIS roles. Furthermore, Exact Synergy Enterprise relies heavily on the web server (IIS). Since a web server is usually accessible from the Internet, it is one of the most vulnerable servers in the network. It is advisable to install only the required components to run Exact Synergy Enterprise. Apart from saving server resources, this will also minimize the risk of unwanted activities on the server.

After installing the application server and IIS roles, you will also need to activate certain role services as these are also deactivated by default.

### 2.6.1 Installing and setting up application server and web server (IIS) server roles

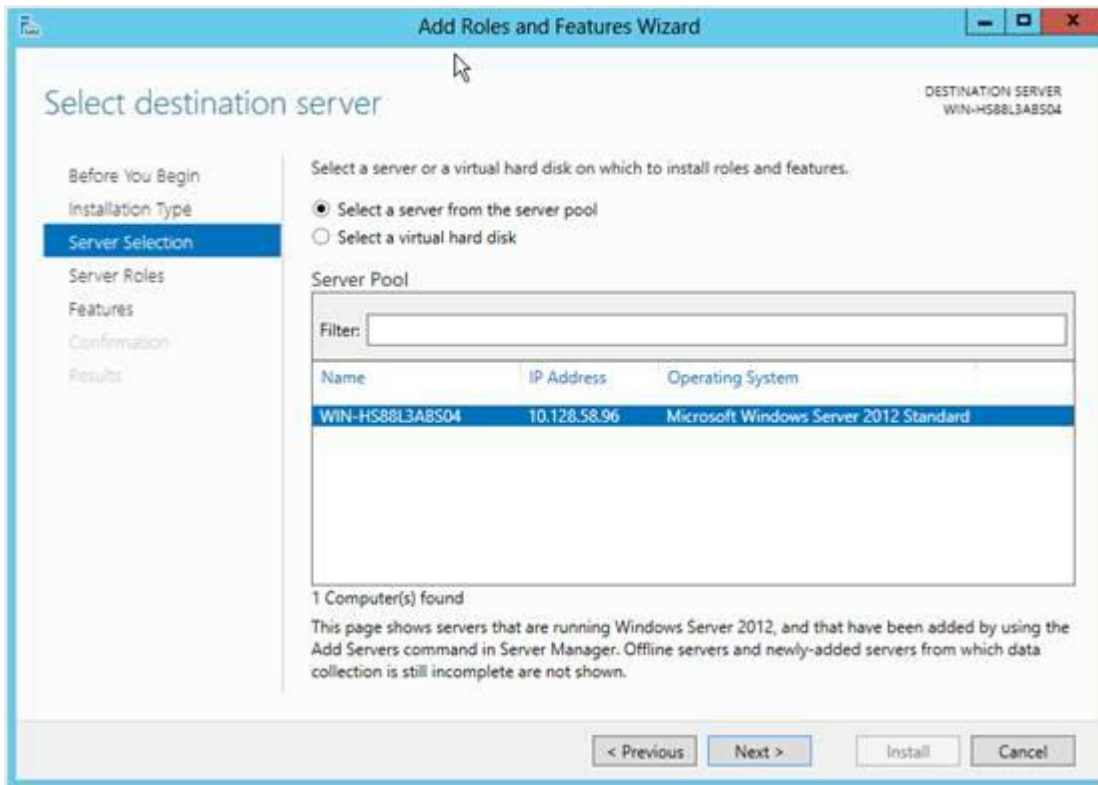
To install and set up application server and web server (IIS) server roles:

1. Go to **Server Manager**.
2. Under the **Manage** menu at the top right corner, select **Add Roles and Features**.
3. In the **Add Roles and Features Wizard** screen, click **Next**.

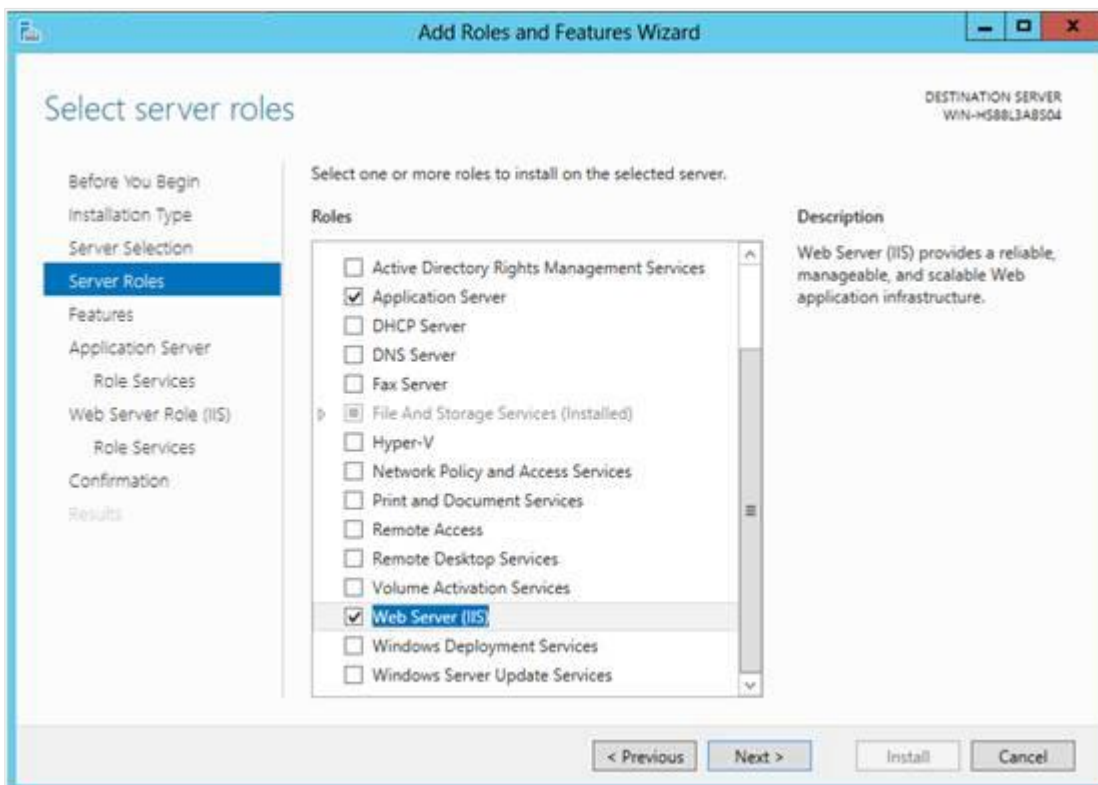


4. Select **Role-based or feature-based installation**.

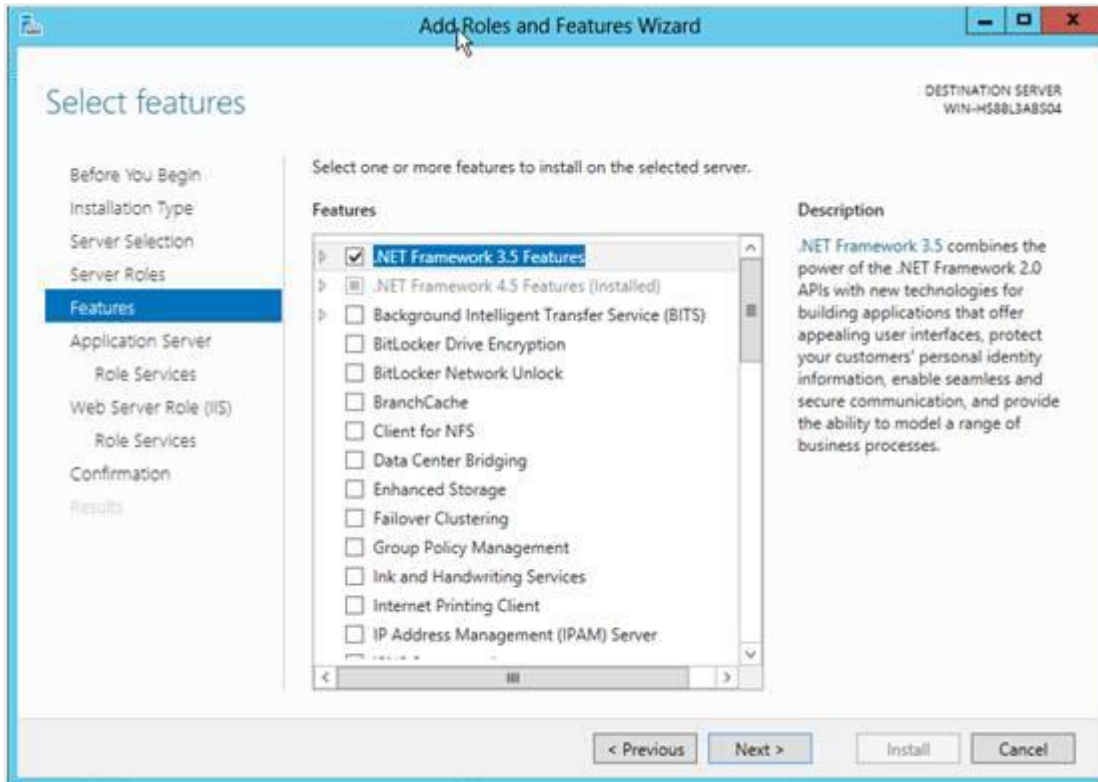
- Next, select the appropriate server, as shown in the following:



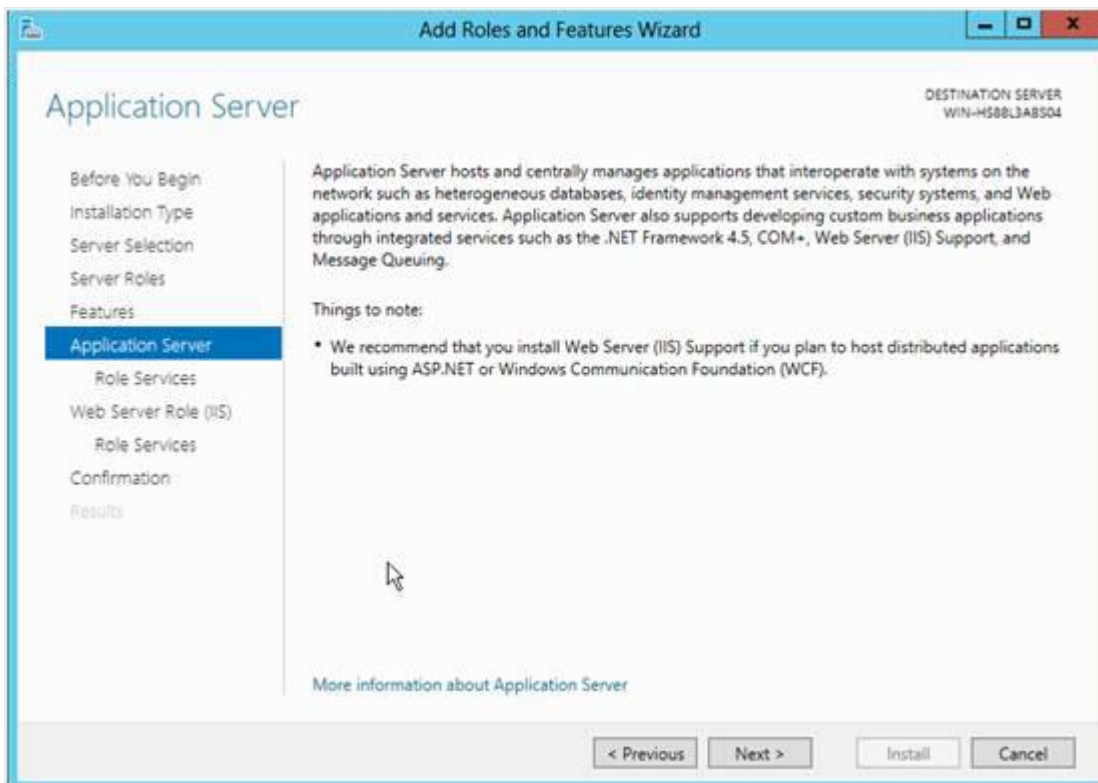
- Click **Next**.
- Select the **Application Server** and **Web Server (IIS)** check boxes.



- Click **Next**.
- Select the .NET Framework 7 check box. If they are already installed, click **Next**.



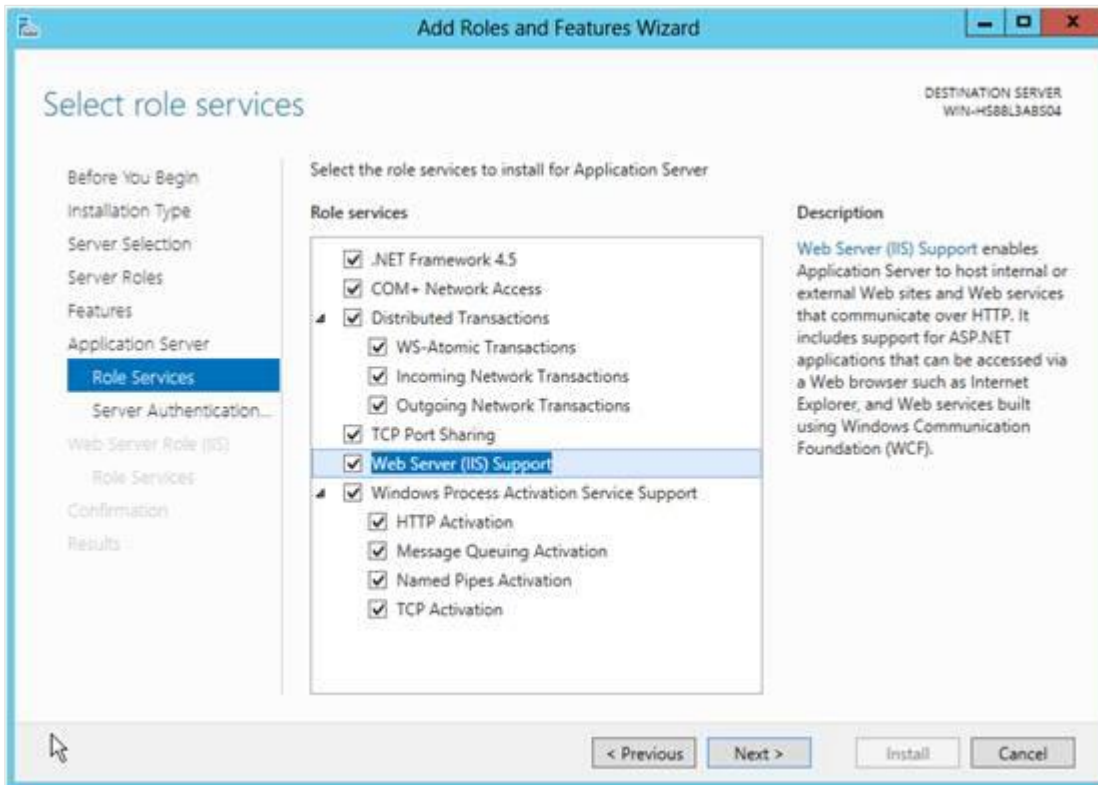
10. The **Application Server** screen will be displayed.



11. Click **Next**.

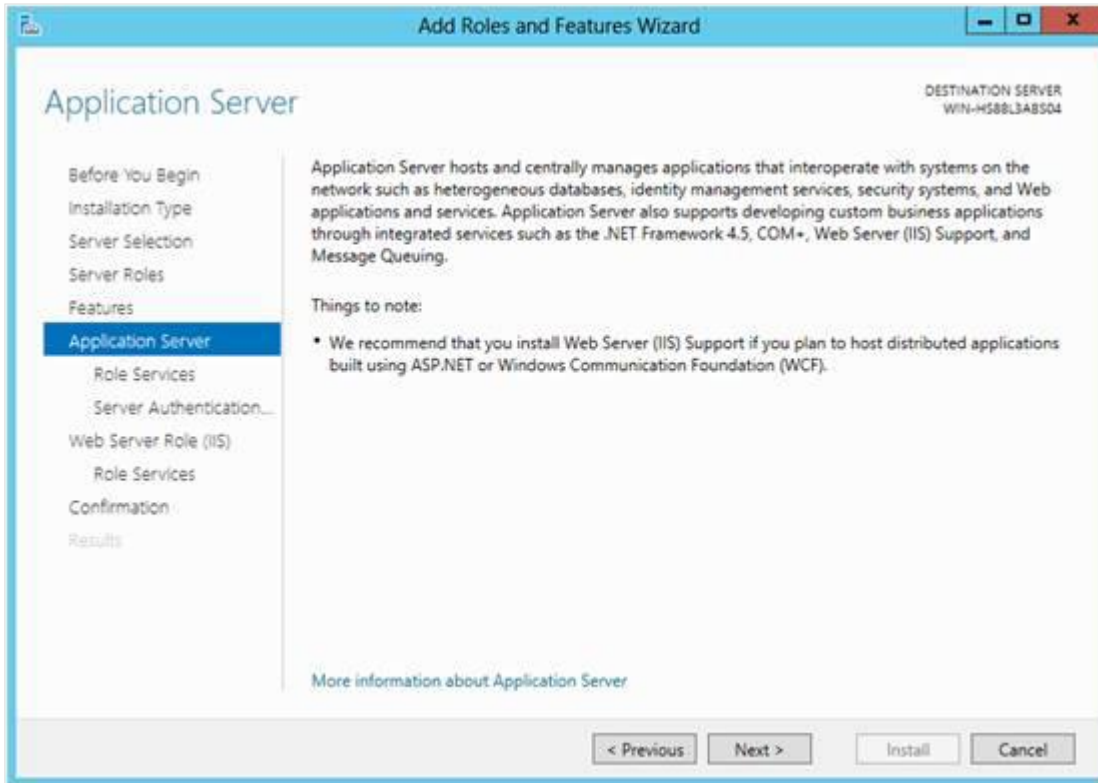


12. Select **.NET Framework 7, Web Server (IIS) Support**, and any other required role services to be installed on the application server. When selecting the **Web Server (IIS) Support** check box, you will be requested for confirmation on adding the required features to the **Web Server (IIS) Support**. You cannot install **Web Server (IIS) Support** unless the required features are installed. Click **Add Required Features**.



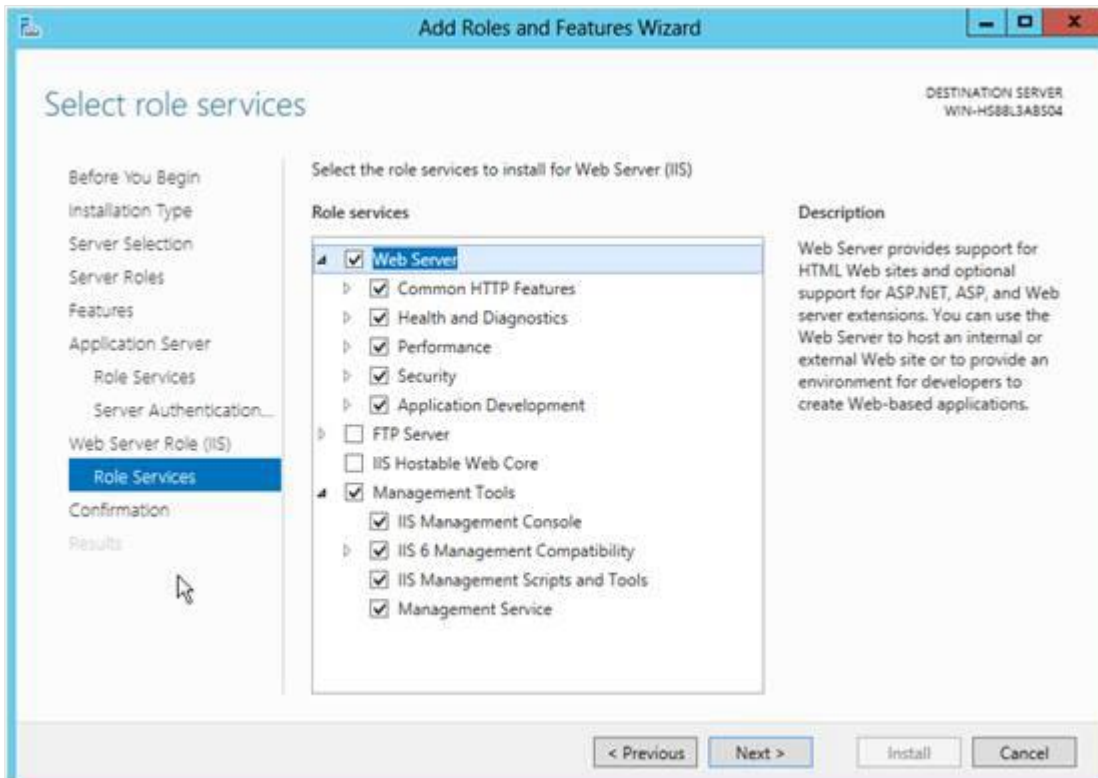
13. Click **Next**.
14. Select the appropriate server authentication certificate for the SSL encryption, and then click **Next**.

15. The **Web Server Role (IIS)** screen will be displayed.



16. Click **Next**.

17. Select the check boxes corresponding to the role services in the following to install on the web server (IIS):



### Common HTTP Features

- Default Document
- Directory Browsing
- HTTP Errors
- Static Content
- HTTP Redirection

### Health and Diagnostics

- HTTP Logging
- Logging Tools
- Request Monitor
- Tracing

### Performance

- Static Content Compression
- Dynamic Content Compression

### Security

- Request Filtering
- Basic Authentication
- Client Certificate Mapping Authentication
- Digest Authentication
- IIS Client Certificate Mapping Authentication
- IP and Domain Restrictions
- URL Authorization
- Windows Authentication

### Application Development

- .NET Extensibility 3.5
- .NET Extensibility 4.5
- ASP
- ASP.NET 3.5
- ASP.NET 4.5
- ISAPI Extension
- ISAPI Filters

### Management Tools

- IIS Management Console
- IIS 6 Management Compatibility
  - IIS 6 Metabase Compatibility
  - IIS 6 Scripting Tools
  - IIS 6 Management Console
  - IIS 6 WMI Compatibility
- IIS Management Scripts and Tools
- Management Service

18. Click **Next**, and then click **Install**.

19. Once installation is successful, click **Close**.

20. To verify the installation, enter the URL <http://localhost/> at the address bar in Microsoft Edge.



**Tip:**

Visit the Microsoft web site on a regular basis to check for the latest service packs, updates, patches, and hot fixes to protect your application server.

## 2.6.2 Installing Microsoft .NET Framework

The Microsoft .NET Framework includes everything you need to run applications using the Microsoft .NET Framework and is therefore required before installing Exact Synergy Enterprise.

**To install Microsoft .NET Framework version 7:**

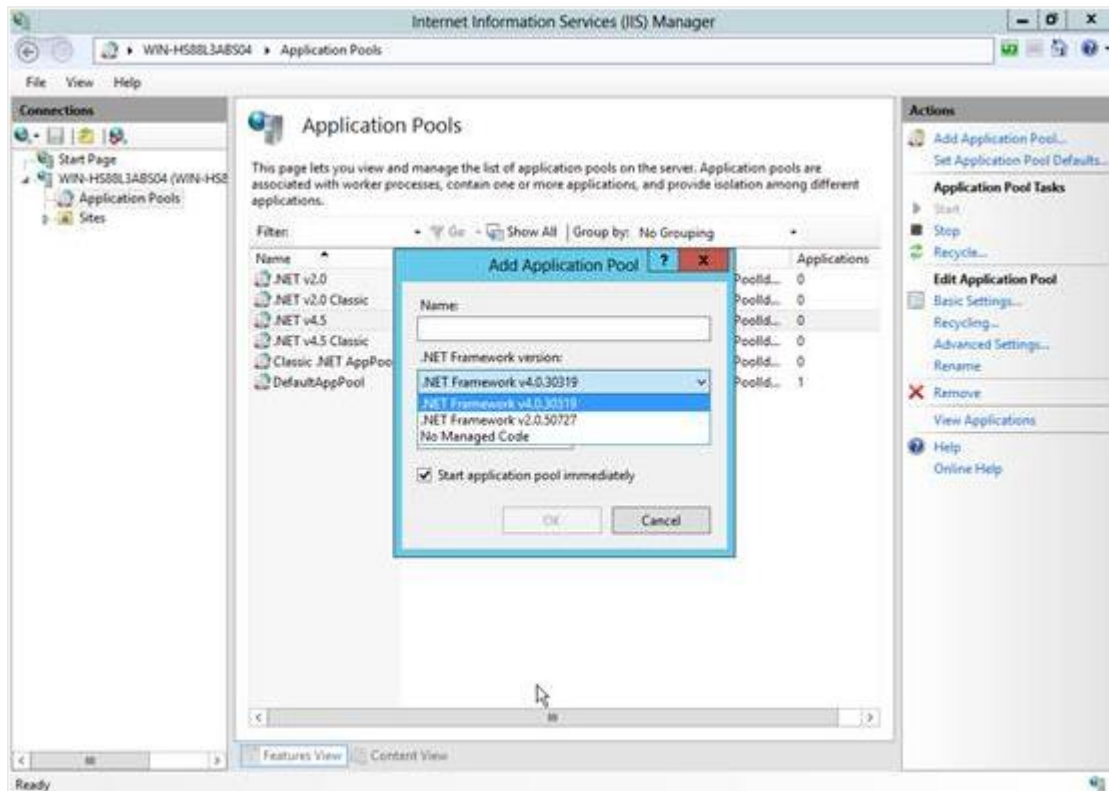
1. Go to the Microsoft website, and download Microsoft .NET Framework version 7.
2. Double-click on the downloaded file to run the installer.
3. Follow the steps in the wizard.

### 2.6.3 Registering Microsoft .NET Framework with web servers (IIS)

After each installation, the installer will automatically register the tool with IIS.

A simple check can be done to see if Microsoft .NET Framework version 7 is running properly by following steps:

1. Go to **Server Manager**.
2. In the **Tools** menu at the top right corner, select **Internet Information Services (IIS) Manager**.
3. In the left pane, expand the server node and select **Application Pools**.



4. In the **Actions pane**, select **Add Application Pool...**
5. At the **.NET Framework version:** field, click the arrow to view the list of all the available options of the .NET Framework version.

**Tip:**

You can also use the ASP.NET IIS Registration tool (`aspnet_regiis.exe`) to display all versions of ASP.NET installed on the computer and perform other operations, such as registering the .NET Framework with IIS. For more information on using ASP.NET IIS Registration tool, see *ASP.NET IIS Registration Tool (Aspnet\_regiis.exe)* at [http://msdn.microsoft.com/en-us/library/k6h9cz8h\(v=VS.90\).aspx](http://msdn.microsoft.com/en-us/library/k6h9cz8h(v=VS.90).aspx).

## 2.6.4 Preparing web servers (IIS)

Before you can install and run Exact Synergy Enterprise, the following several settings must be configured in the IIS web server:

- enable dynamic content in IIS,
- set appropriate download and upload file size limits,
- ensure that the Web garden is not used in IIS, and
- configure the required authentication persistence.

### Enabling ASP.NET in IIS

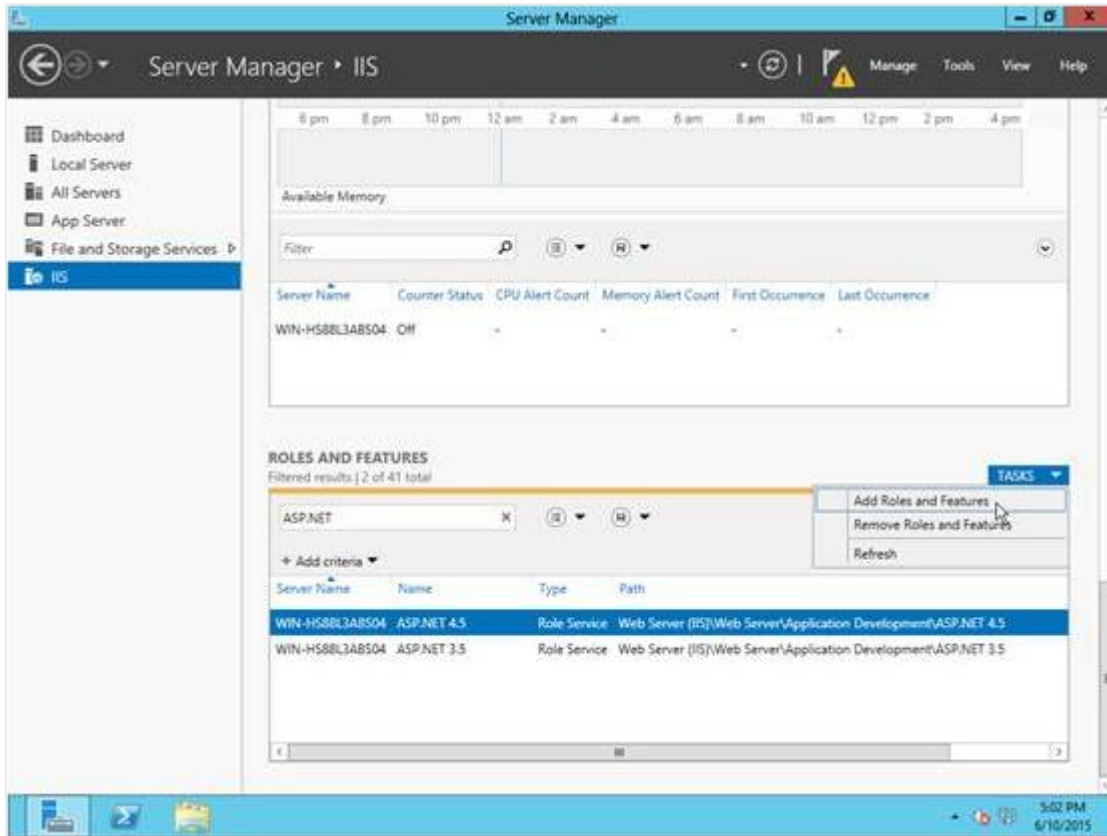
By default, dynamic content, such as ASP and ASP.NET are not activated in IIS for security reasons. It is important to enable ASP.NET to ensure that the Microsoft .NET framework used in IIS is the correct version.

To add ASP.NET (3.5 and 4.5) in the web server (IIS 8.0) role services, see *2.6.1 Installing and setting up application server and web server (IIS) server roles*.

A simple check can be done to see if ASP.NET dynamic content in the web server (IIS) has been enabled.

### To enable ASP.NET dynamic content in IIS 8.0 web servers:

1. Go to **Server Manager**.
2. In the left pane, select **IIS**. A list of roles services will be displayed under the **ROLES AND FEATURES** section. Search from the list to confirm whether the **ASP.NET 4.5** and **ASP.NET 3.5** role services are listed. If not, you can install them by clicking **Add Roles and Features** under the **TASKS** menu at the top right of the section.

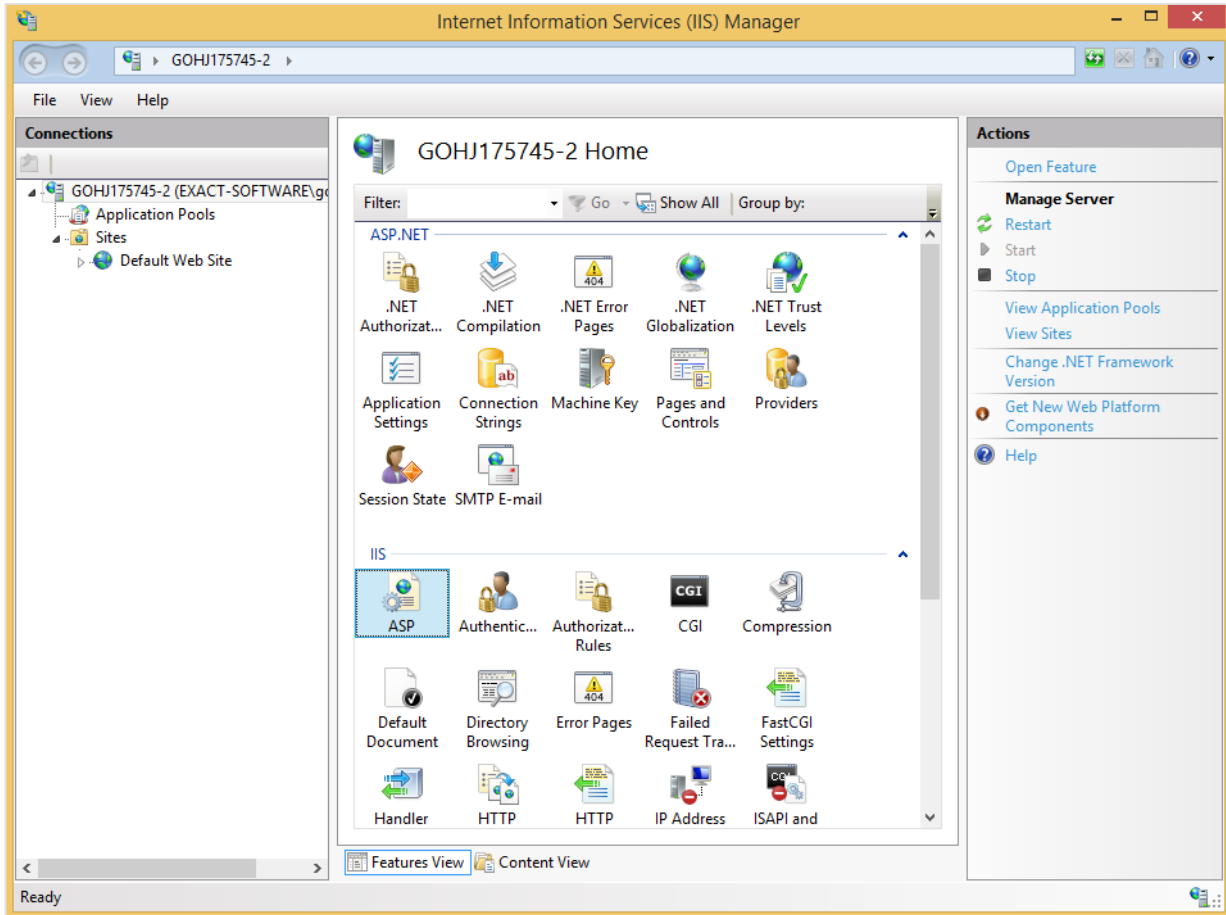


## Setting the appropriate file size limits for downloads and uploads

By default, the file size limit is 4 MB for downloading and 200 KB for uploading when using ASP.NET. If a user attempts to download an attached file larger than 4 MB, the download will fail. Likewise, the user cannot upload an attachment larger than 200 KB.

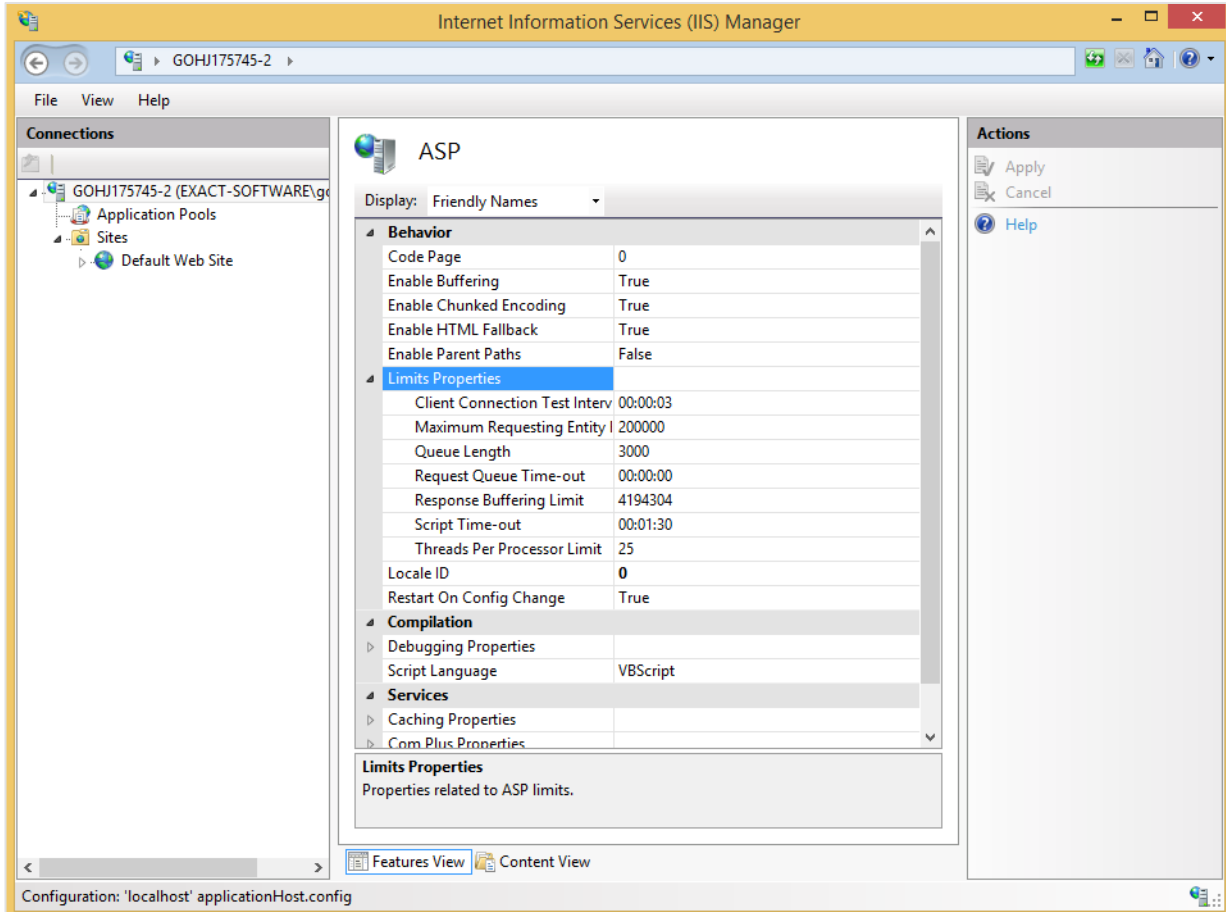
### To set appropriate file size limits for downloads and uploads:

1. Go to Start → Control Panel → Administrative Tools → Internet Information Services (IIS) Manager.
2. In the left pane, expand the server node and double-click **ASP** under the **IIS** section.





3. To set the file size for upload, expand **Limits Properties** under the **Behavior** section, type the appropriate value (in bytes) at **Maximum Requesting Entity Body Limit**.
4. To set the file size for download, expand **Limits Properties**, type the appropriate value (in bytes) at **Response Buffering Limit**.



5. In the **Actions** pane, click **Apply** to save changes.

**Tip:**

To convert the MB value for the upload and download size to bytes, multiply the number with 1024 twice. For example, the bytes equivalent of 30 MB is  $30 \times 1024 \times 1024 = 31457280$ .

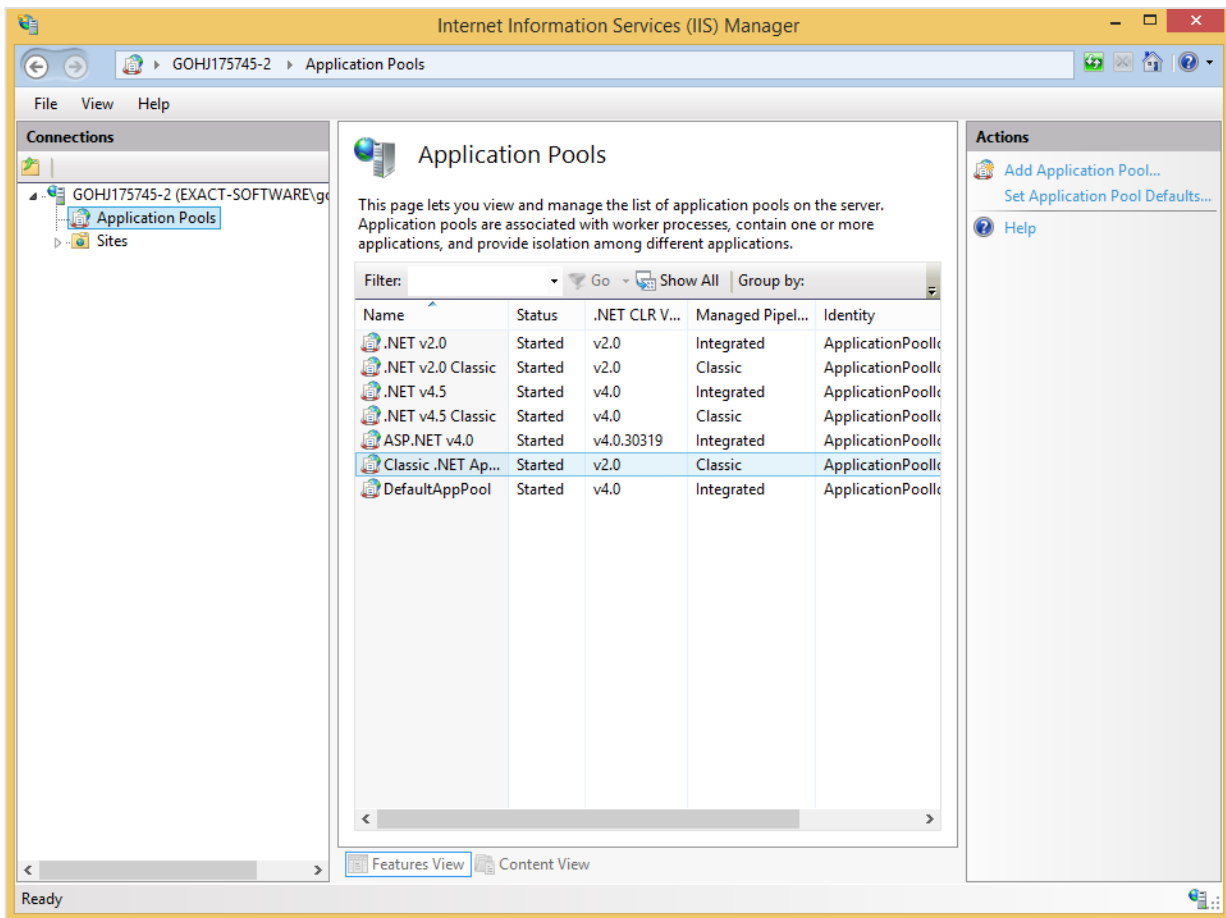
## Ensuring Web garden is disabled in IIS

Exact Synergy Enterprise will not be able to function properly if Web garden is used. Due to this, you must ensure that Web garden is not enabled in IIS. You can get more information on Web garden from the IIS documentation.

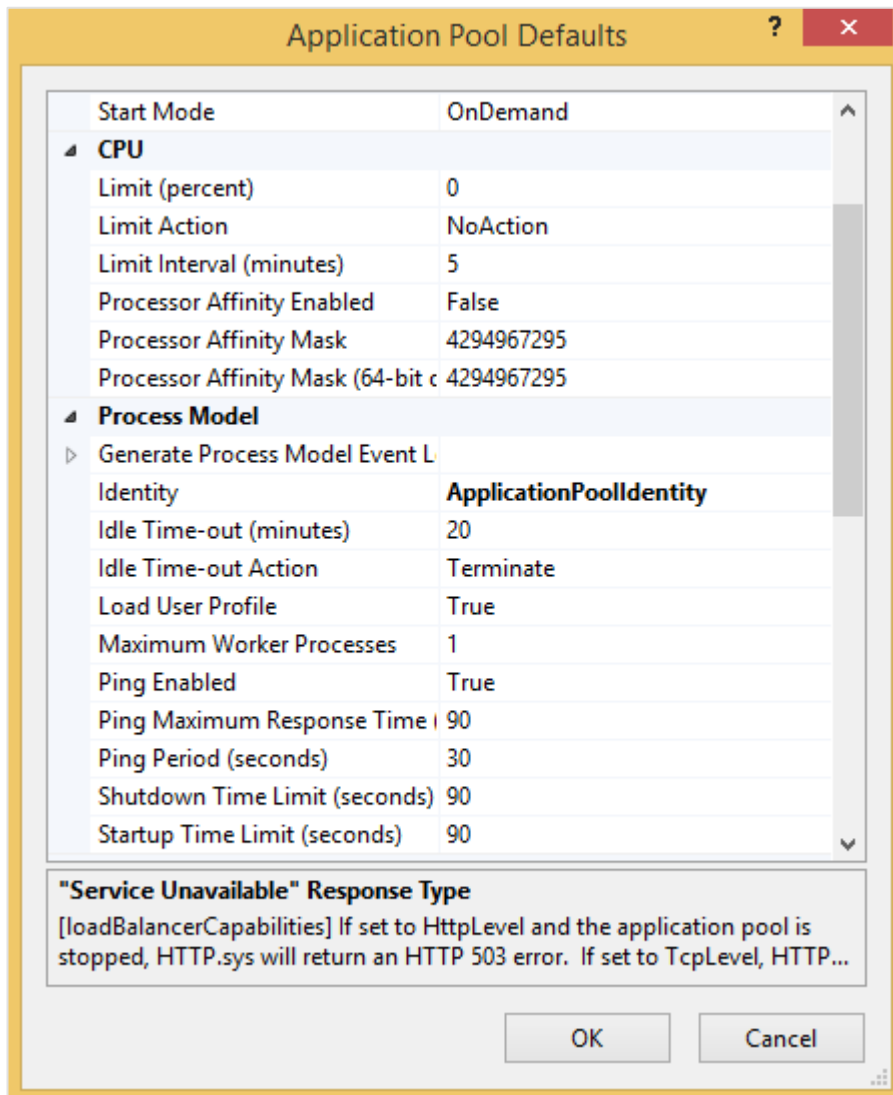
By default, the Web garden is disabled from IIS 7.0 onwards.

### To disable IIS Web garden:

1. Go to Start → Control Panel → Administrative Tools → Internet Information Services (IIS) Manager.
2. Expand the server node.
3. Click the **Application Pools** folder and the **Application Pools** summary will be displayed.



- In the **Actions** pane, select **Set Application Pool Defaults...**, and then set **Maximum Worker Processes** to 1.



- Click **OK**, and then close **Internet Information Services (IIS) Manager**.

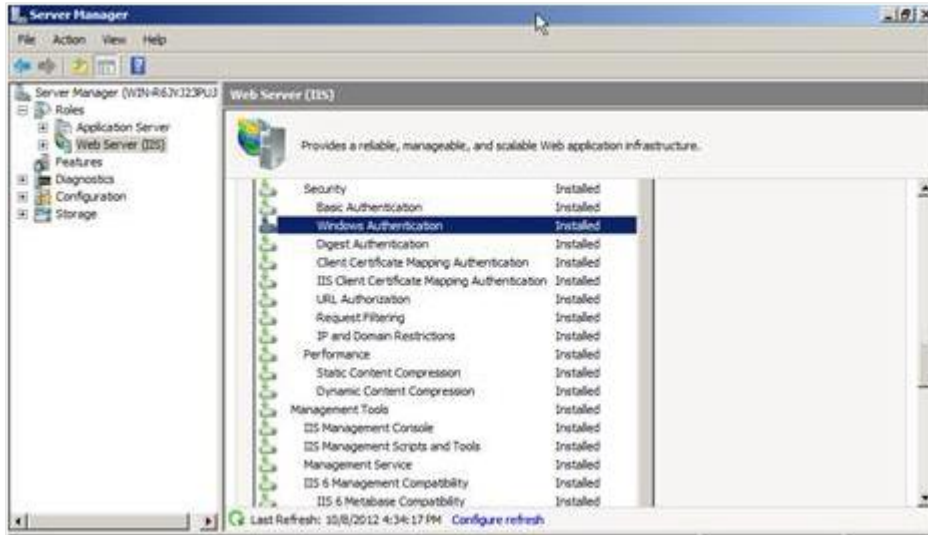
## Configuring IIS authentication

In order to avoid users with appropriate roles and security settings in Exact Synergy Enterprise from being denied access due to insufficient rights, it is important to configure the authentication modes in the IIS.

To add **Windows Authentication**, **Basic Authentication**, and **URL Authorization (for Forms Authentication)** in the web server (IIS) role services, see *2.6.1 Installing and setting up application server and web server (IIS) server roles*.

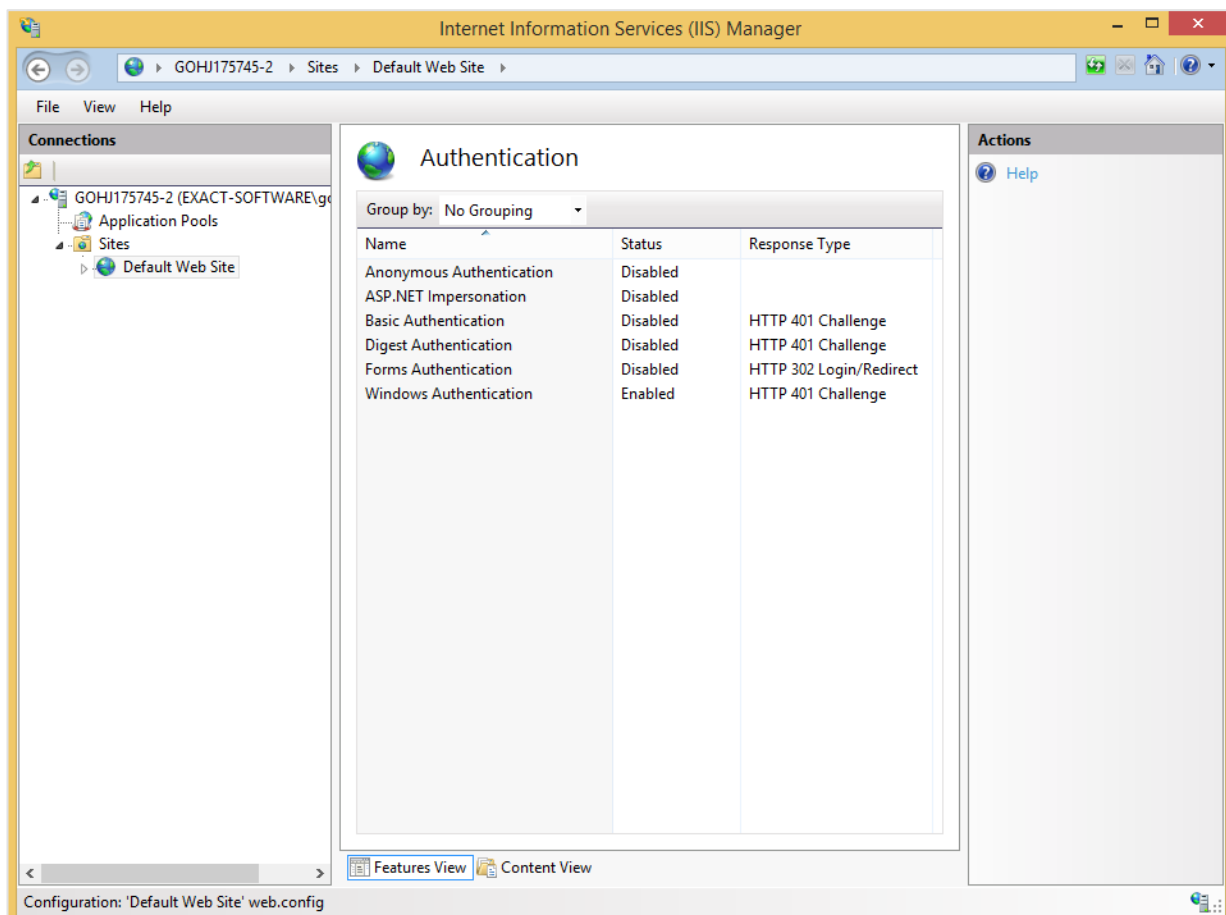
To check if the **Windows Authentication**, **Basic Authentication**, and **URL Authorization** role services in **Web server (IIS)** are enabled:

1. Go to Start → Control Panel → Server Manager.
2. Expand the server node. Click **Roles** to expand it, and select **Web Server (IIS)**. A list of roles services will be displayed under **Role Services**. Search from the list to confirm whether the **Windows Authentication**, **Basic Authentication**, and **URL Authorization** role services are **Installed**.



**To configure authentication modes:**

1. Go to Start → Control Panel → Administrative Tools → Internet Information Services (IIS) Manager.
2. In the left pane, expand the server node. Click **Sites** to expand it, and then click **Default Web Site**.
3. In **Features View**, double-click the **Authentication** feature under the **IIS** section.
4. In the **Authentication** pane, configure the authentication modes as follows:
  - Right-click **Anonymous Authentication**, and then select **Disable**.
  - Right-click **ASP.NET Impersonation**, and then select **Disable**.
  - Right-click **Basic Authentication**, and then select **Disable**.
  - Right-click **Digestion Authentication**, and then select **Disable**.
  - Right-click **Forms Authentication**, and then select **Disable**.
  - Right-click **Windows Authentication**, and then select **Enable**.

**Note:**

When anonymous accesses to the web sites are intended, right-click **Anonymous Authentication** and select **Enable**. Disable the rest of the authentication methods. **Anonymous Authentication** must be disabled when authenticated accesses are required.

**Windows Authentication** and **Basic Authentication** require users to respond correctly to a server-initiated challenge while **Forms Authentication** relies on redirections to a login page to determine the identity of the user. **Forms Authentication** cannot be enabled while **Windows Authentication** and/or **Basic Authentication** are enabled.

**Tip:**

If you are not able to view document attachments on your iPhones and iPads when using the Exact **CRM** mobile application, you may need to enable the **Basic Authentication** setting only. This is because iOS7 (Apple) has no longer supports **Windows Authentication**. Exact **CRM** mobile application is introduced in product update 252. For more information, see *Exact CRM mobile application introduced (Doc ID: 25.311.714)*, *Activation use of Exact CRM mobile application (Doc ID: 25.306.244)*, and *System requirements for Apps (Doc ID: 25.309.288)* on your Exact Synergy Enterprise.

## 2.7 SETTING UP THE DATABASE SERVER

The database server must be prepared and configured before operating Exact Synergy Enterprise. The Database Management System (DBMS) supported by Exact Synergy Enterprise is Microsoft SQL Server 2016.

For more information on Microsoft SQL Server 2008 R2, see *2.6.3 Installing Microsoft SQL Server 2008 R2*.

### 2.7.1 Preparation before installing Microsoft SQL Server 2014

Before beginning the installation process, check the following prerequisites:

- Ensure the computer meets the system requirements.
- Make sure you have administrator's rights on the computer where Microsoft SQL Server 2014 (SQL Server 2014) will be installed.

**Note:**

For local installations, you must run the Microsoft SQL Server installer as an administrator. If you are installing from a remote share location, you need a domain account that has **Read** and **Execute** permissions on the remote share location. To create a failover cluster, you need to be a local administrator with permissions to log on as a service and act as part of the operating system on all nodes of the virtual server.

- Back up the Exact Synergy Enterprise database on the current SQL server.
- Verify that the disk where SQL Server 2014 is to be installed is uncompressed.

**Caution:**

If you attempt to install SQL Server 2014 on a compressed drive, the setup will fail.

- Exit your antivirus software while upgrading to SQL Server 2014.
- Stop all services that depend on the current SQL server, including any service using Open Database Connectivity (ODBC), such as Internet Information Services (IIS).
- Exit Event Viewer, and registry editors (**Regedit.exe** or **Regedt32.exe**).

Once these prerequisites are met, proceed to install SQL Server 2014.

## 2.7.2 Installing Microsoft SQL Server 2014

In a standalone environment, you have to perform these steps on the workstation where you work with Exact Globe Next. In all other cases, you have to perform these steps on the server.

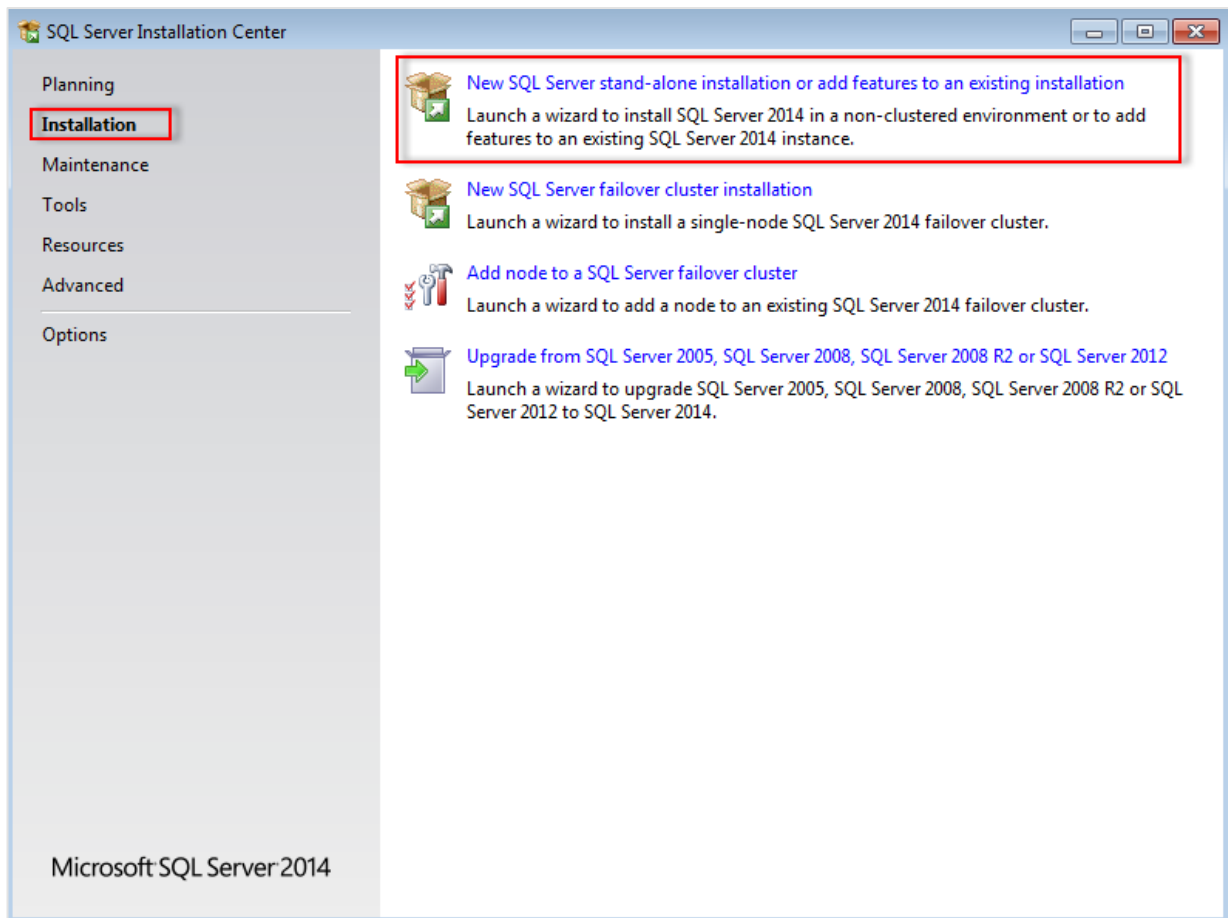
When working in a standalone environment, you will have one computer on which you are working with Exact Globe Next. On this computer, both Exact Globe Next and the SQL Server are installed. This is seen as a standalone even when your computer is part of a network, as all software needed to work with Exact Globe Next are installed on this one computer.

Before installing the SQL Server, check the system requirements for the specific SQL Server edition at <https://msdn.microsoft.com/en-us/library/ms143506.aspx>.

When these requirements are met, you can start installing SQL Server 2014.

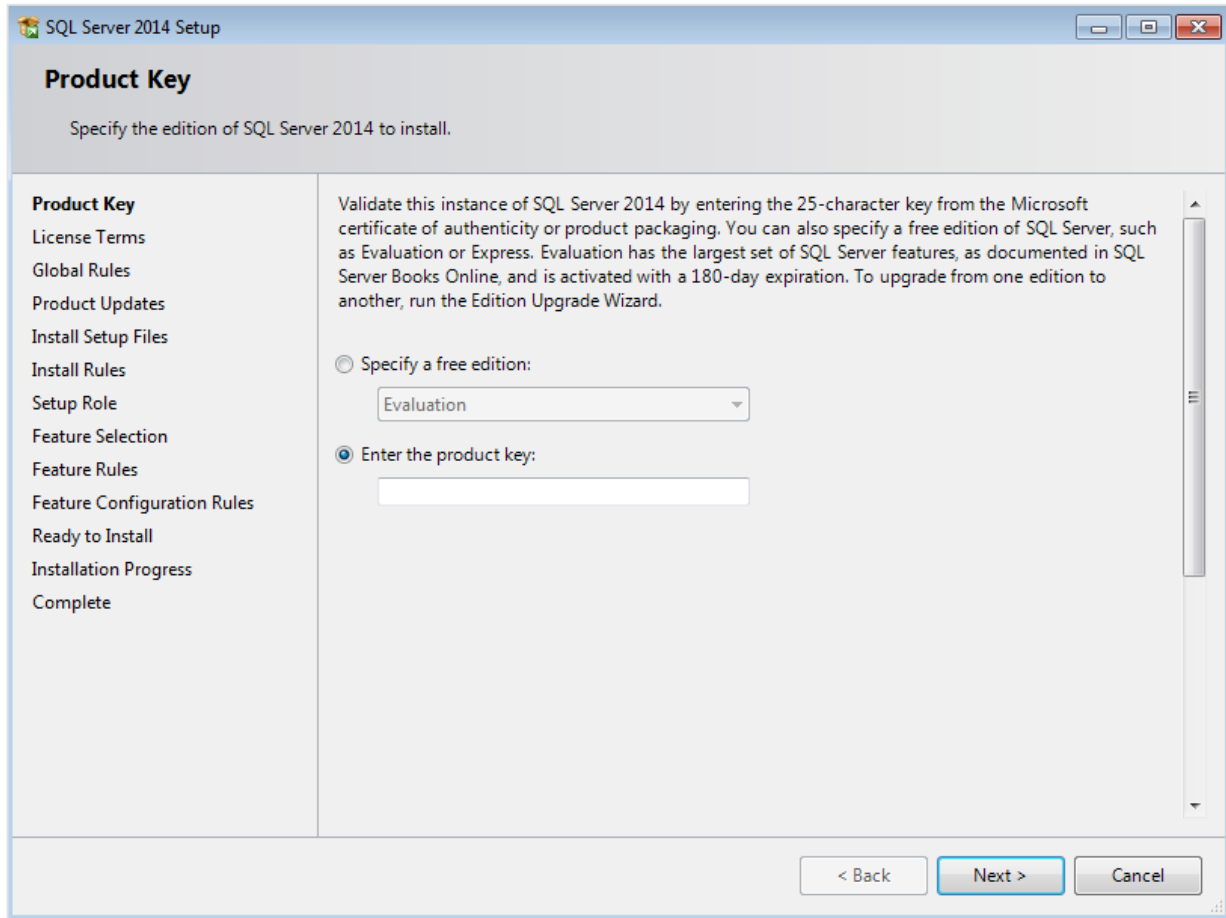
### To install Microsoft SQL Server 2014

1. Log in as an administrator on the server (of a workstation in case of a standalone installation).
2. Insert the SQL Server installation DVD into your DVD drive. When the autorun is not performed, open the DVD drive in Windows Explorer and start the installation by clicking **Setup.exe**.
3. The **SQL Server Installation Center** screen will be displayed. In this screen, you can view and execute several installation tasks.

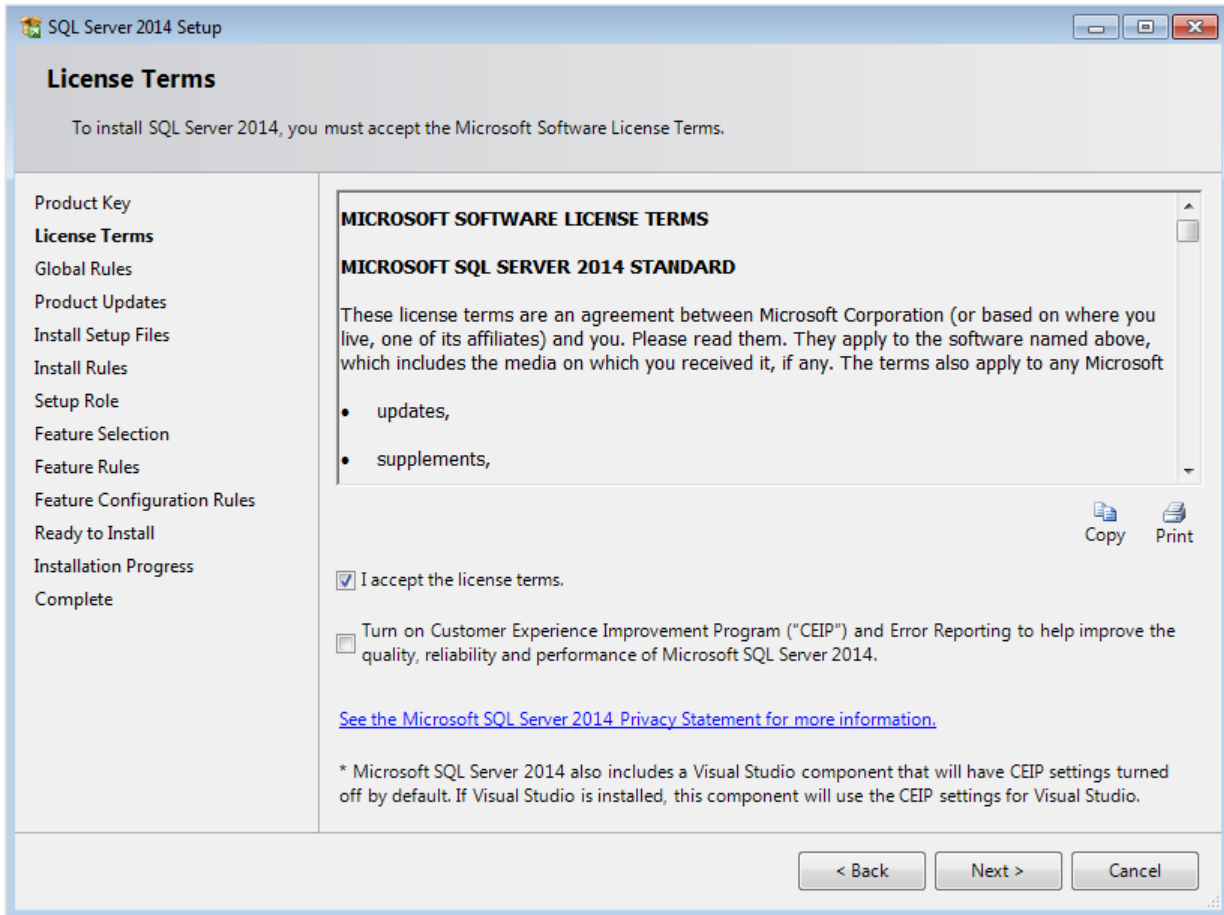




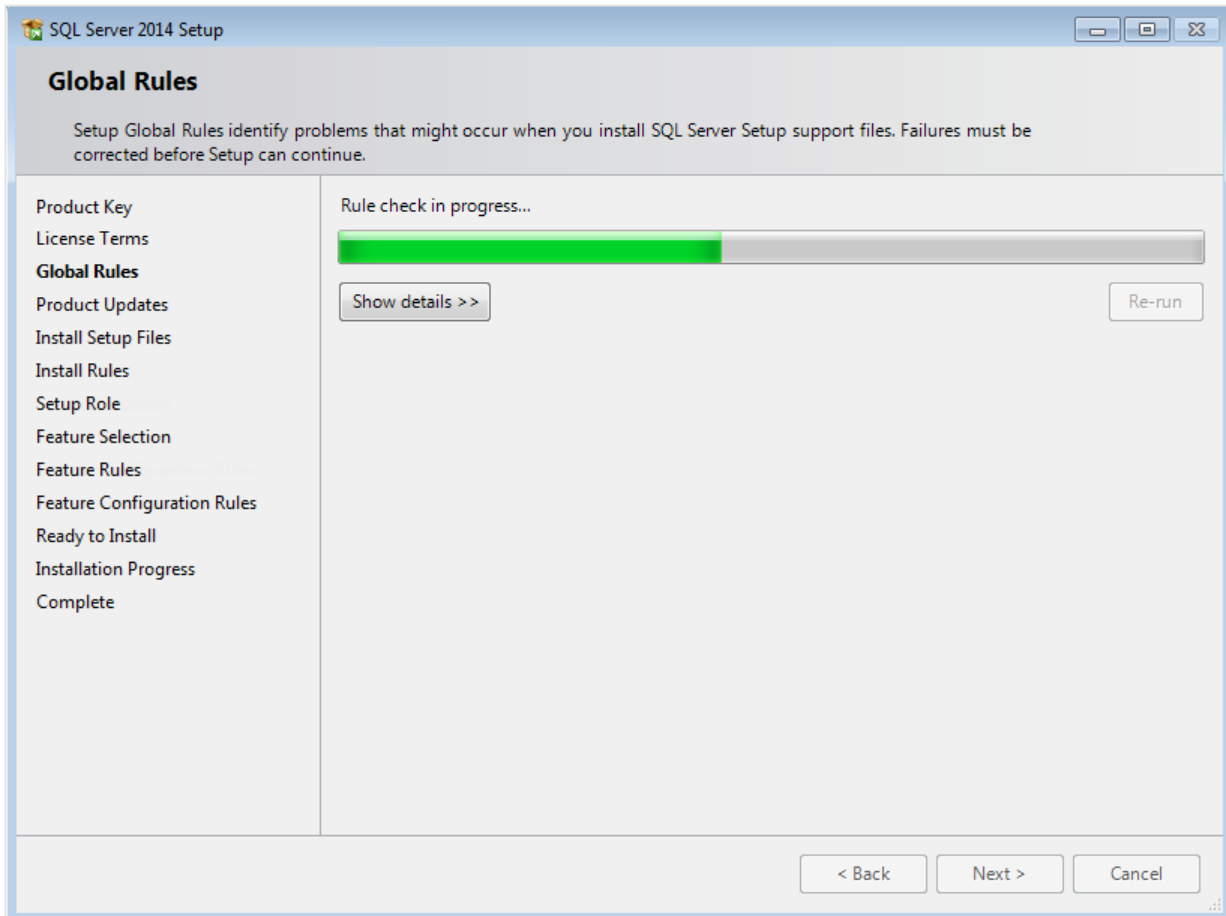
4. Click Installation on the left panel. Next, click New SQL Server stand-alone installation or add features to an existing installation.



5. In the **Product Key** screen, type the product key at **Enter the product key** if the product key is not filled automatically. Click **Next** to continue. The screen with the license terms will be displayed.



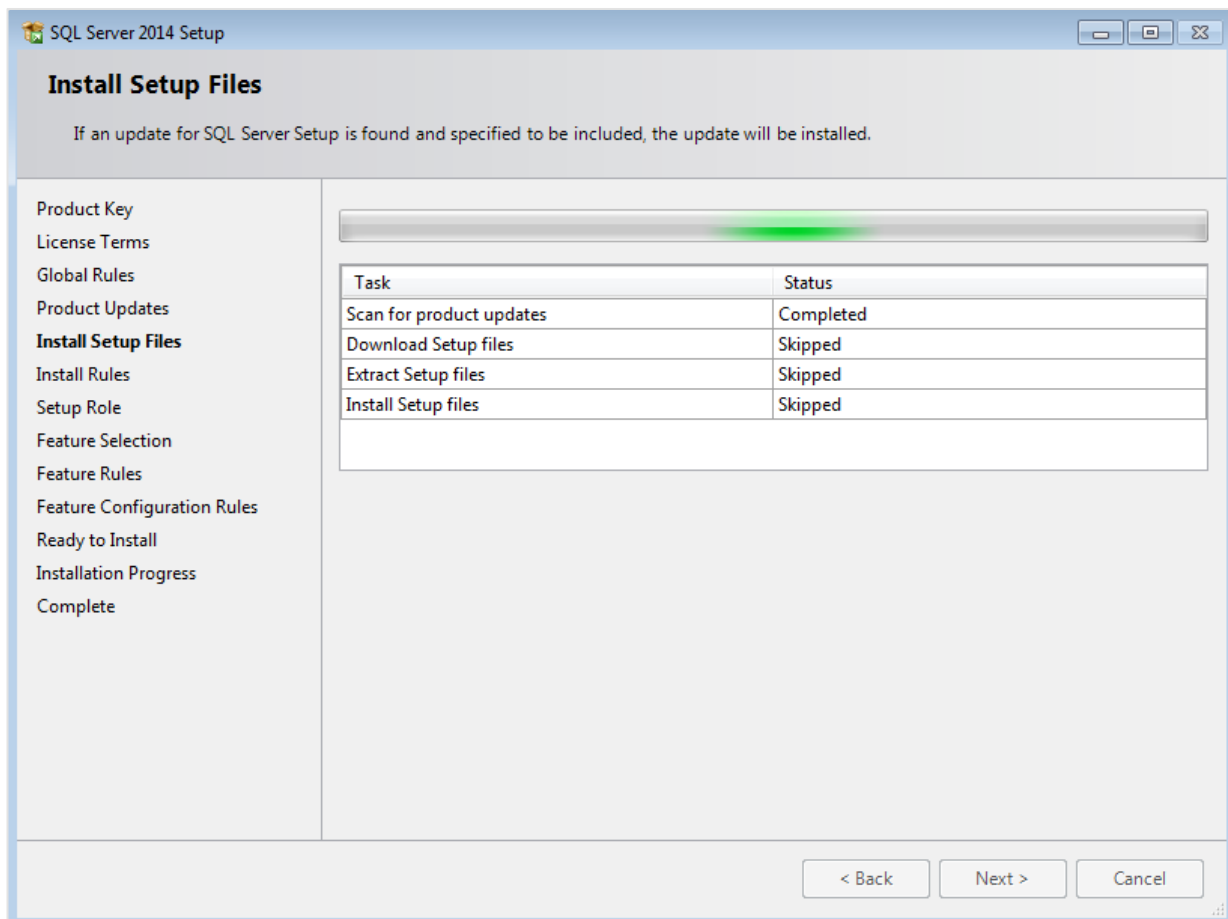
- To continue, select **I accept the license terms** and click **Next**.



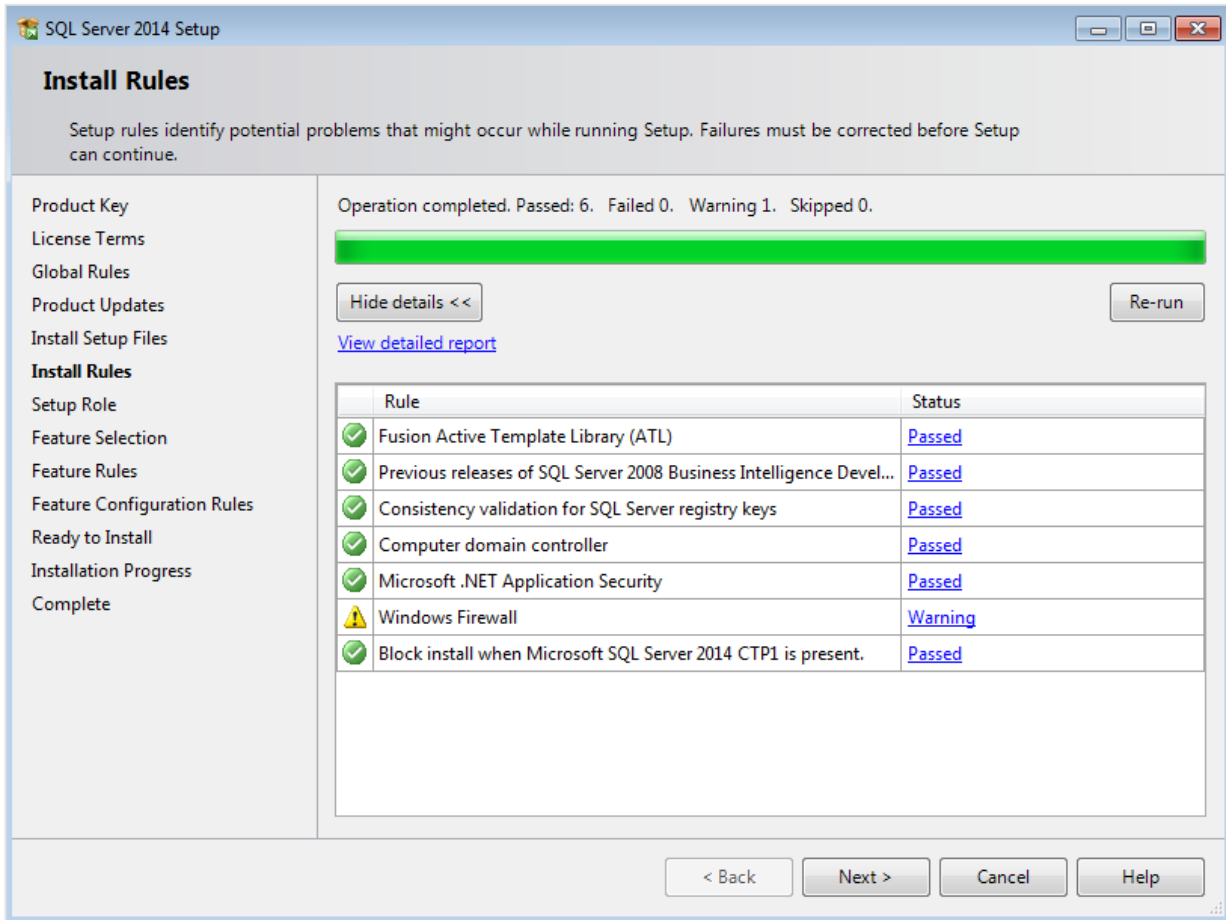
- Checks will be performed to identify possible problems when installing the SQL Server Setup support files. The SQL Server Setup support files are needed for the installation of MS SQL Server 2014 and are automatically installed via this installation wizard. Click **Show details >>** to view the details of these checks. When all checks are passed, the results are displayed in this screen. When a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and the error. After solving the issue, click **Re-run** to perform the checks again.

**Note:**

It is possible that some warnings are displayed regarding the firewall. In spite of the warnings, it is still possible to continue with the installation. Depending on the situation, it may or may not be necessary to close the installation wizard and restart. When all checks are passed, this screen will close automatically and the next screen will be displayed.



8. The installation wizard will check for updates and installs the available update files. As soon as this is done, the screen will close automatically and the next screen will be displayed:

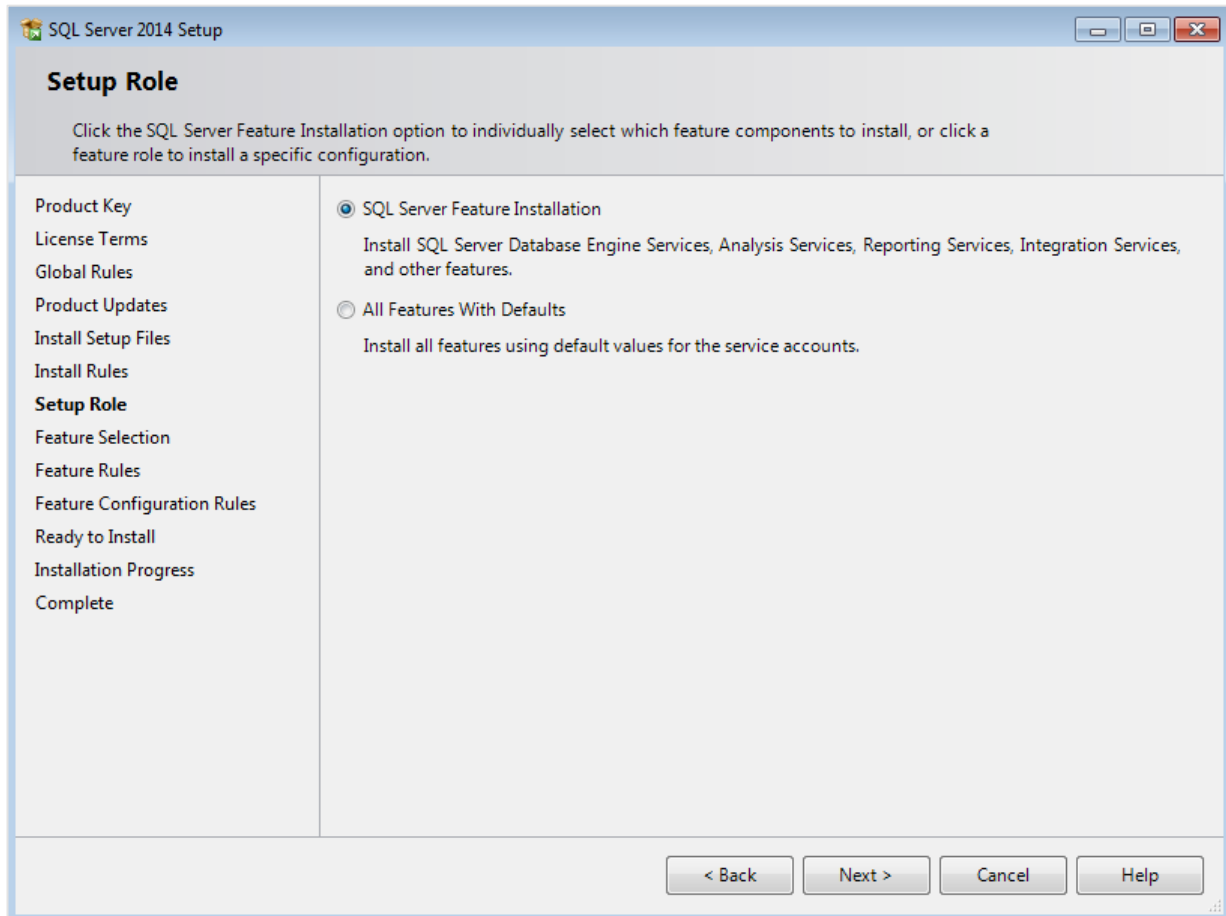


9. Checks will be performed to identify potential problems that might occur during the installation. Click **Show details >>** to view the details of these checks. When a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and the error. After solving the issue, click **Re-run** to perform the checks again.

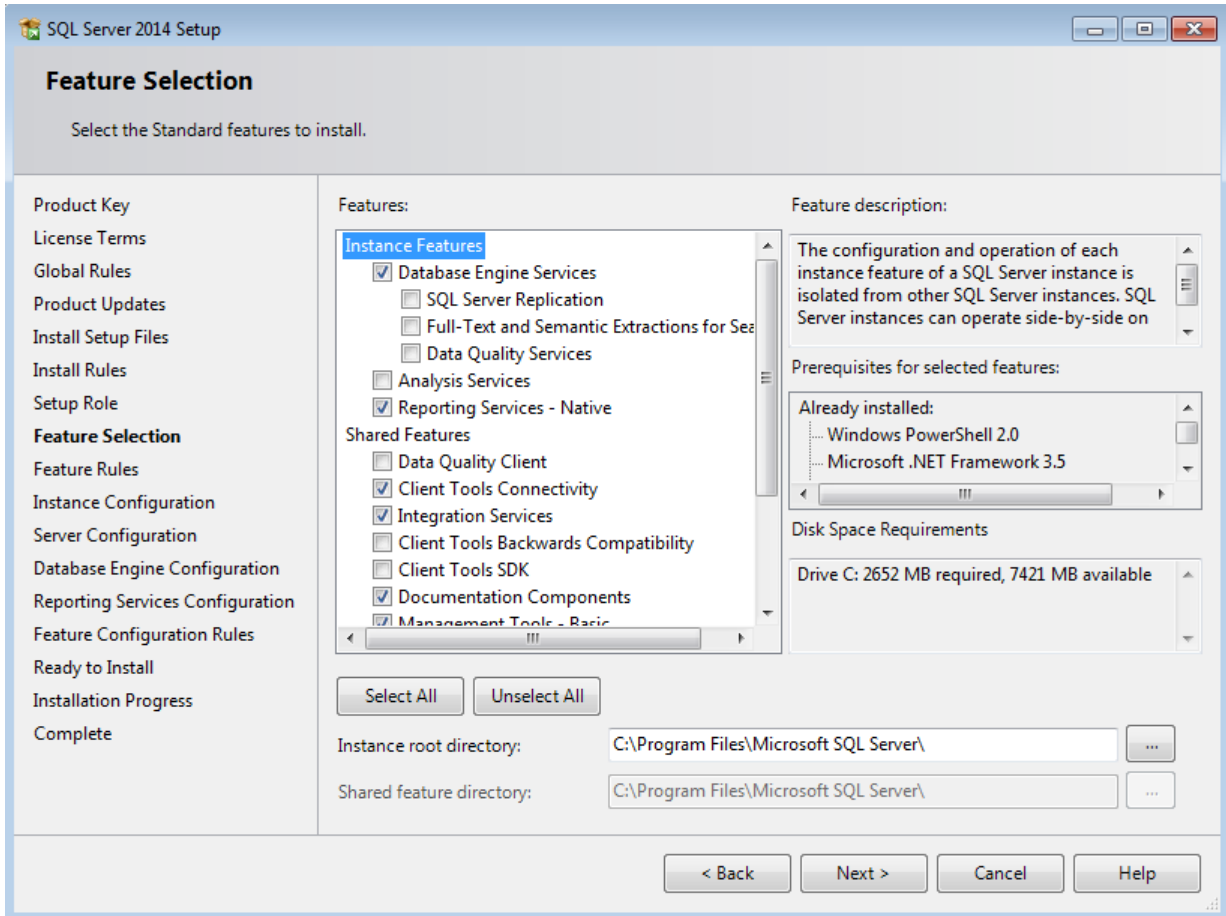
**Note:**

Depending on the situation, it may or may not be necessary to close the installation wizard and restart.

10. Click **Next** to continue. However, the **Next** button is available only when no checks have failed.

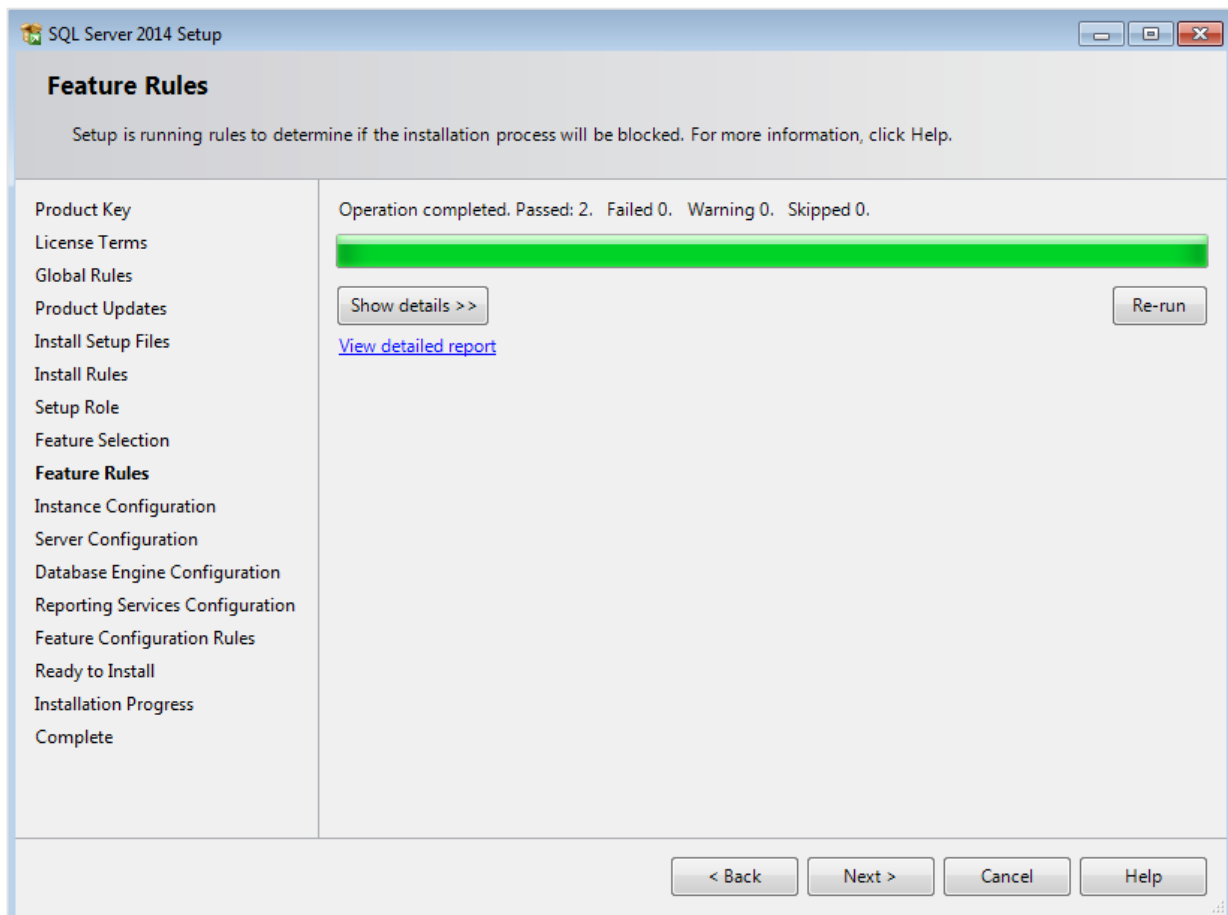


11. In the **Setup Role** screen, define if you want to install all components of the SQL Server with default values. Select **SQL Server Feature Installation** and click **Next** to continue.



12. Select the features to install. When you select a feature, the corresponding information about this feature will be displayed on the right. Select the following features:
- Database Engine Services
  - Reporting Services - Native (applicable only when you are using SQL Server Reporting services and/or Exact Globe Next with extended functionality)
  - Client Tools Connectivity
  - Integration Services
  - Documentation Components
  - Management Tools - Basic
  - Management Tools – Complete

Besides selecting the features, you do not have to change anything else. Click **Next** to continue.



13. Checks will be performed to identify issues that might block the installation. Click **Show details >>** to view the details of these checks. When a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and the error. After solving the issue, click **Re-run** to perform the checks again.

**Note:**

Depending on the situation, it may or may not be necessary to close the installation wizard and restart.



14. Click **Next** to continue. However, the **Next** button is available only when no checks have failed.

The screenshot shows the 'Instance Configuration' window in the SQL Server 2014 Setup wizard. The window title is 'SQL Server 2014 Setup'. The main heading is 'Instance Configuration' with a subtitle: 'Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installation path.'

On the left is a navigation pane with the following items: Product Key, License Terms, Global Rules, Product Updates, Install Setup Files, Install Rules, Setup Role, Feature Selection, Feature Rules, **Instance Configuration** (highlighted), Server Configuration, Database Engine Configuration, Reporting Services Configuration, Feature Configuration Rules, Ready to Install, Installation Progress, and Complete.

The main area contains the following configuration options:

- Default instance
- Named instance:
- Instance ID:
- SQL Server directory: C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER
- Reporting Services directory: C:\Program Files\Microsoft SQL Server\MSRS12.MSSQLSERVER

Below these is a table titled 'Installed instances':

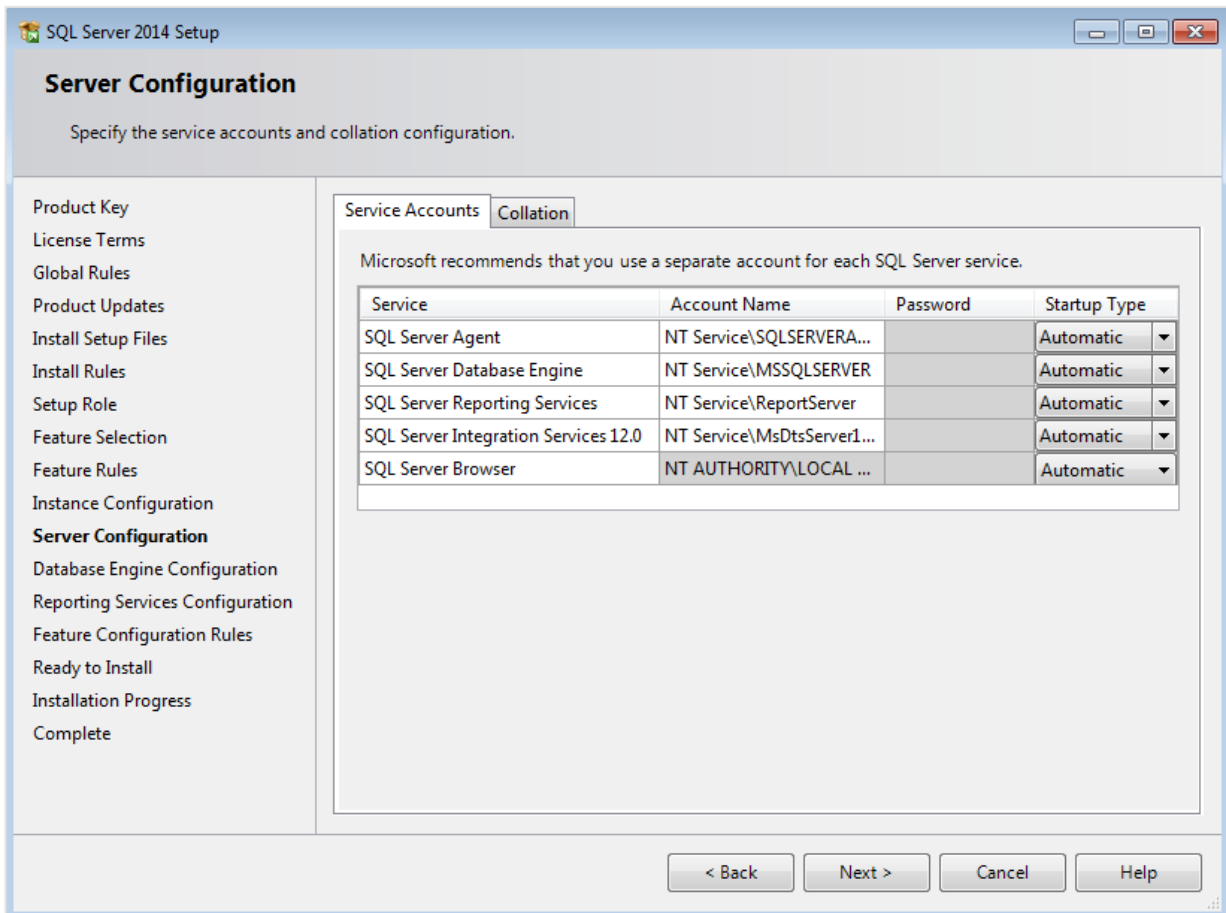
Instance Name	Instance ID	Features	Edition	Version

At the bottom right are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

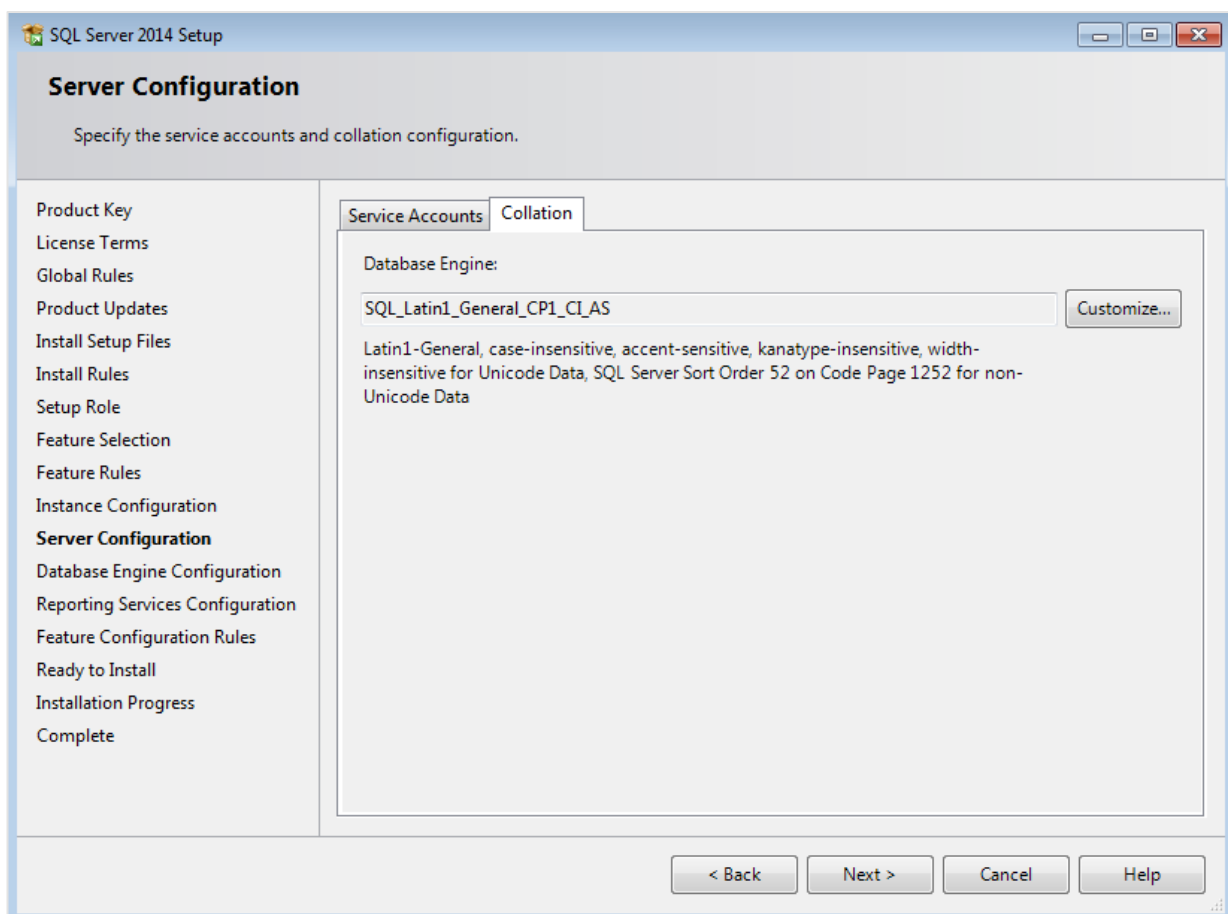
15. When the actions in the previous screen are completed, the screen will close automatically and the next screen will be displayed. In the **Instance Configuration** screen, define a name for the instance. This is the name for your SQL Server. Click **Next** to continue.

**Note:**

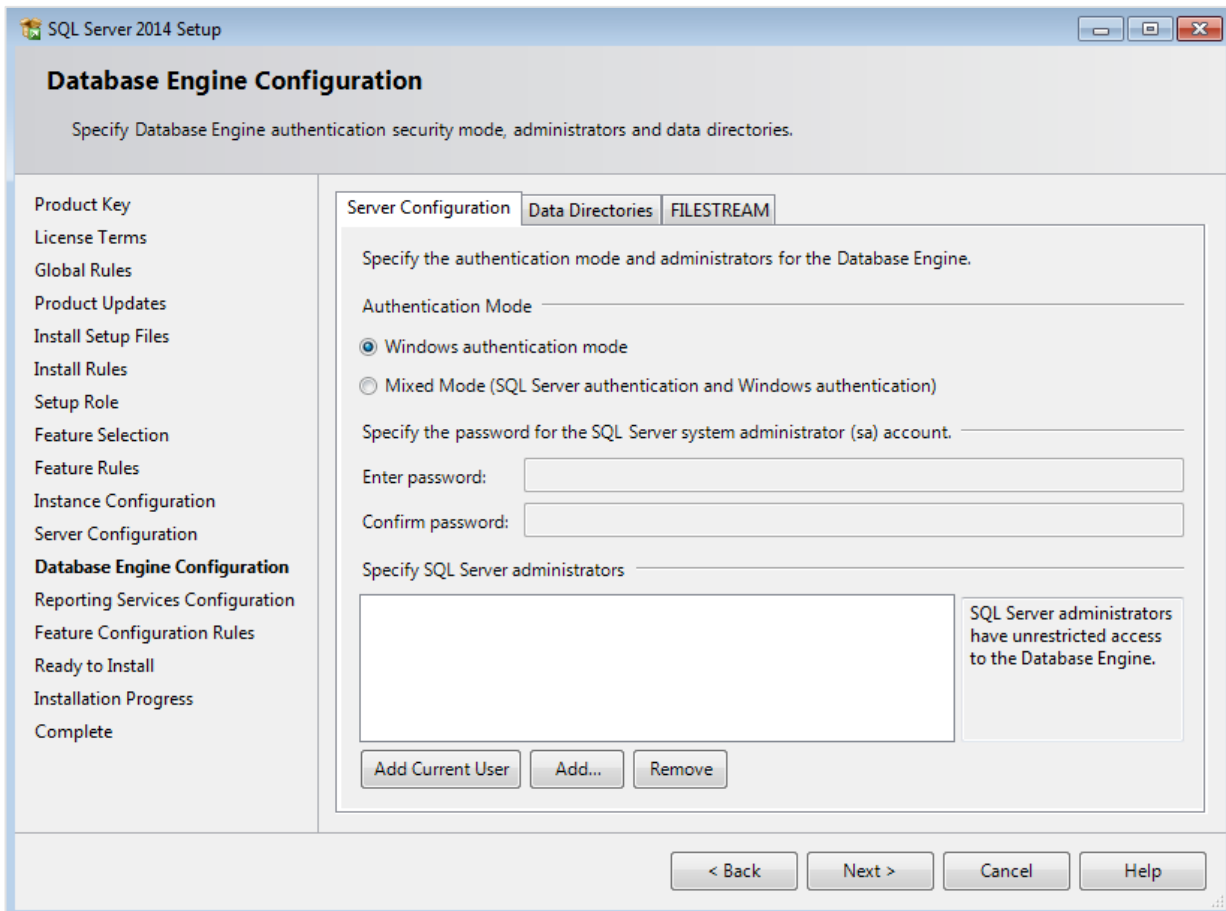
- **New installation** — When it is a new installation, there is no SQL Server present in your system yet. In this case, select **Default instance**. There is no need to change anything else in the screen. At the bottom of the screen, you can see if there are already other SQL Server instances present. When this is a new installation in a system where no SQL Server is present yet, this part of the screen is empty.
- **Installing new instance** — When there are existing SQL Server installations present, you have to select **Named instance** and define a name in the box next to it, for example “SQL2014”. The name defined here has to be unique and cannot be the same as any of the names of the other instances that are already present on your system. The field **Instance ID** will be filled automatically and you do not have to change this manually. At the bottom of the screen, you can see if any other instances are present.



16. In this screen, under the **Service Accounts** tab, you can define which account you want to use for starting the MS SQL Server 2014 services. For a standard installation, accept the data as suggested in the screen. Keep in mind that when you select a user for which the password regularly changes, you will also have to change the password in the services every time. If you forget to change the password in the services, the services cannot be started and you will not be able to use the SQL Server until you have updated the password in the services, and have started the services. Depending on the account selected at **Account Name**, you have to enter the corresponding password at **Password**.
17. In the **Startup Type** column, you can define that the service has to start automatically when the system starts. The **SQL Server Database Engine** is the SQL Server itself. This service should always be started in order to use the SQL Server. The **SQL Server Browser** service is a service that is used for identifying the ports that the installation of SQL Server listens to. This service needs to be started to enable network access. The **Startup Type** option of this service should be **Automatic**. The account name of this service cannot be changed.



18. Under the **Collation** tab, you can define the collation (character set) settings. For Western European countries, you can accept the collation as displayed in the screen. Click **Next** to continue. The following screen will be displayed:



19. Under the **Server Configuration** tab, define how you would like to log on to the SQL Server. When you are working with Exact Synergy Enterprise and/or Exact Globe Next with extended functionality, select **Mixed Mode (SQL Server authentication and Windows authentication)**. Type your password at **Enter password** and **Confirm password**. This password is a password that will be used for the SA user; this default user is the System Administrator within the SQL Server. If you select **Windows authentication mode**, you do not have to type a password.

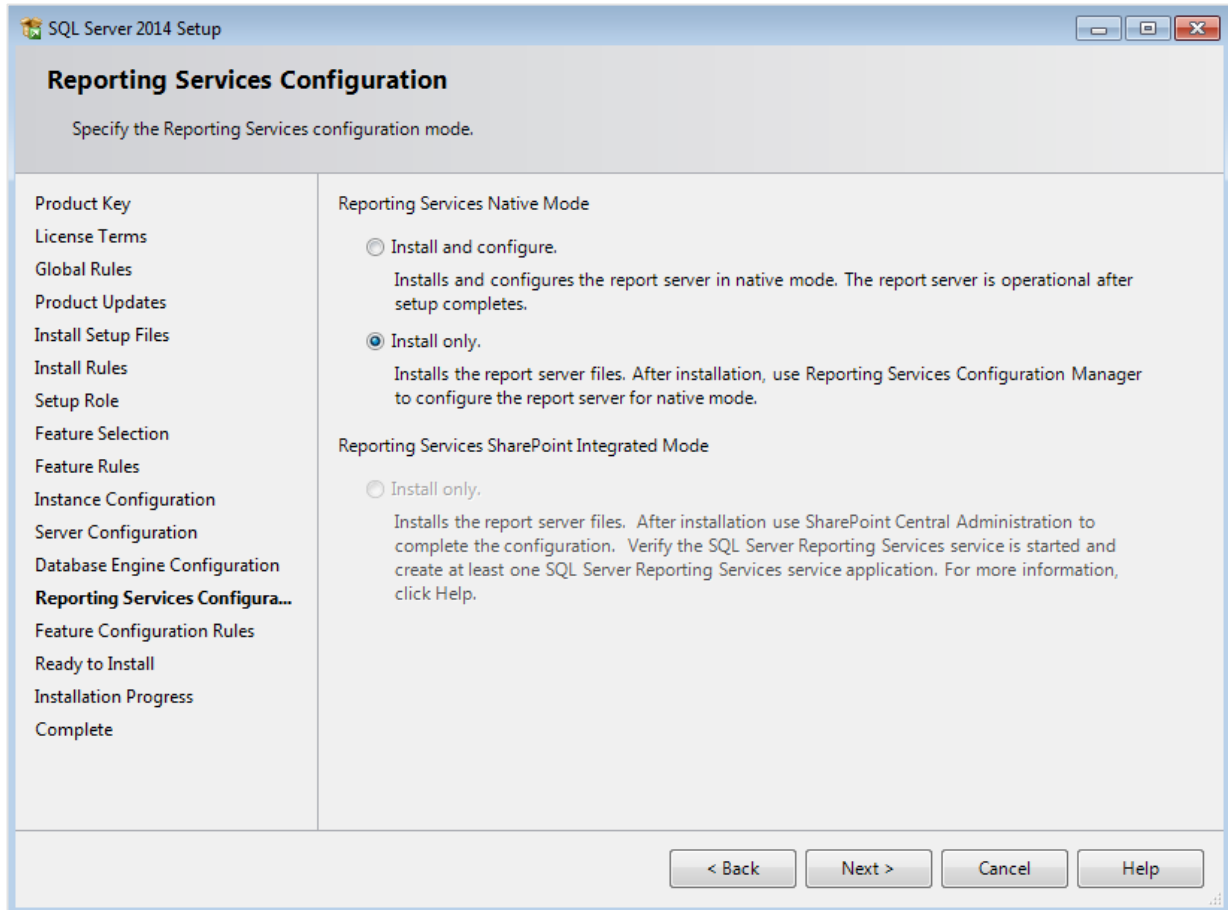
**Note:**

Regardless of which Exact product you use, you will always have to define one user or more at the bottom of the screen. These users will be administrators on the SQL Server. You have to select at least one user. This user will be the administrator on the SQL Server and can also add other users later on.

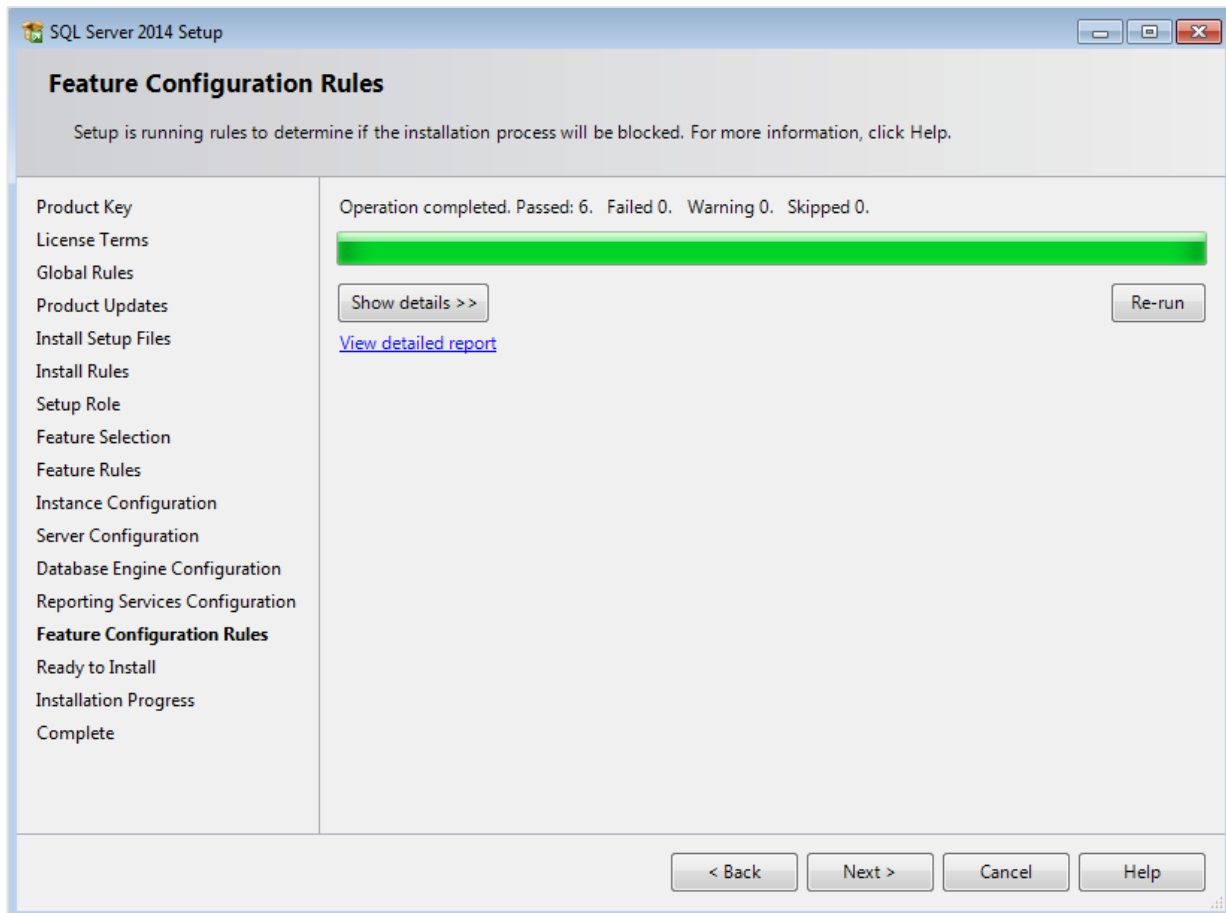
20. Click **Add Current User** to add the users that are currently performing the installation as an administrator. Click **Add** to add other users or **Remove** to remove selected users.
21. Click **Next** to continue.

**Note:**

The following screen will be displayed only if you have selected the **Reporting Services – Native** feature.



22. In this screen, define if you want to configure the reporting services feature now or if you want to configure it later. Select **Install only** to install the feature and configure it later. Click **Next** to continue.

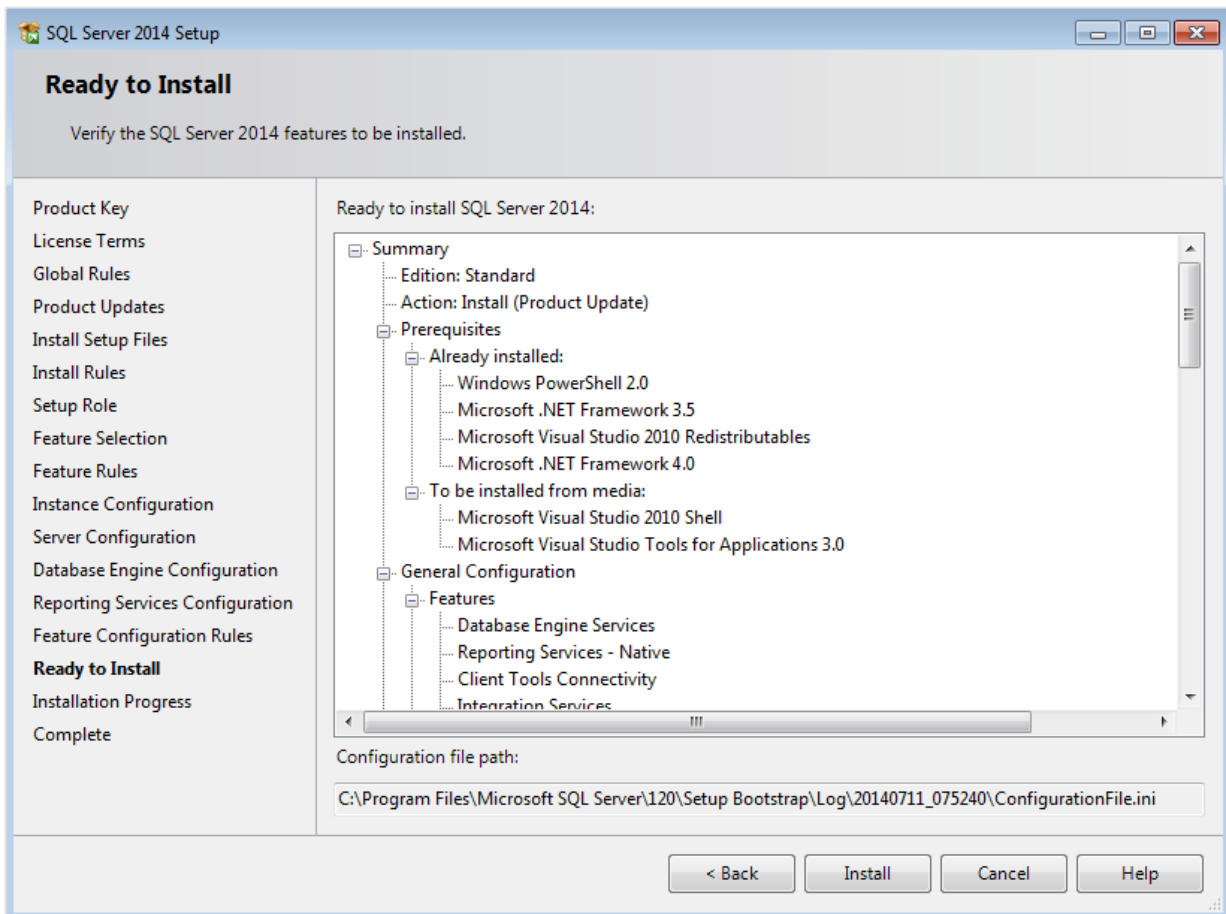


23. In the **Feature Configuration Rules** screen, checks will be performed for problems that might occur during the installation. Click **Show details >>** to view the details of these checks. When a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and the error. After solving the issue, click **Re-run** to perform the checks again.

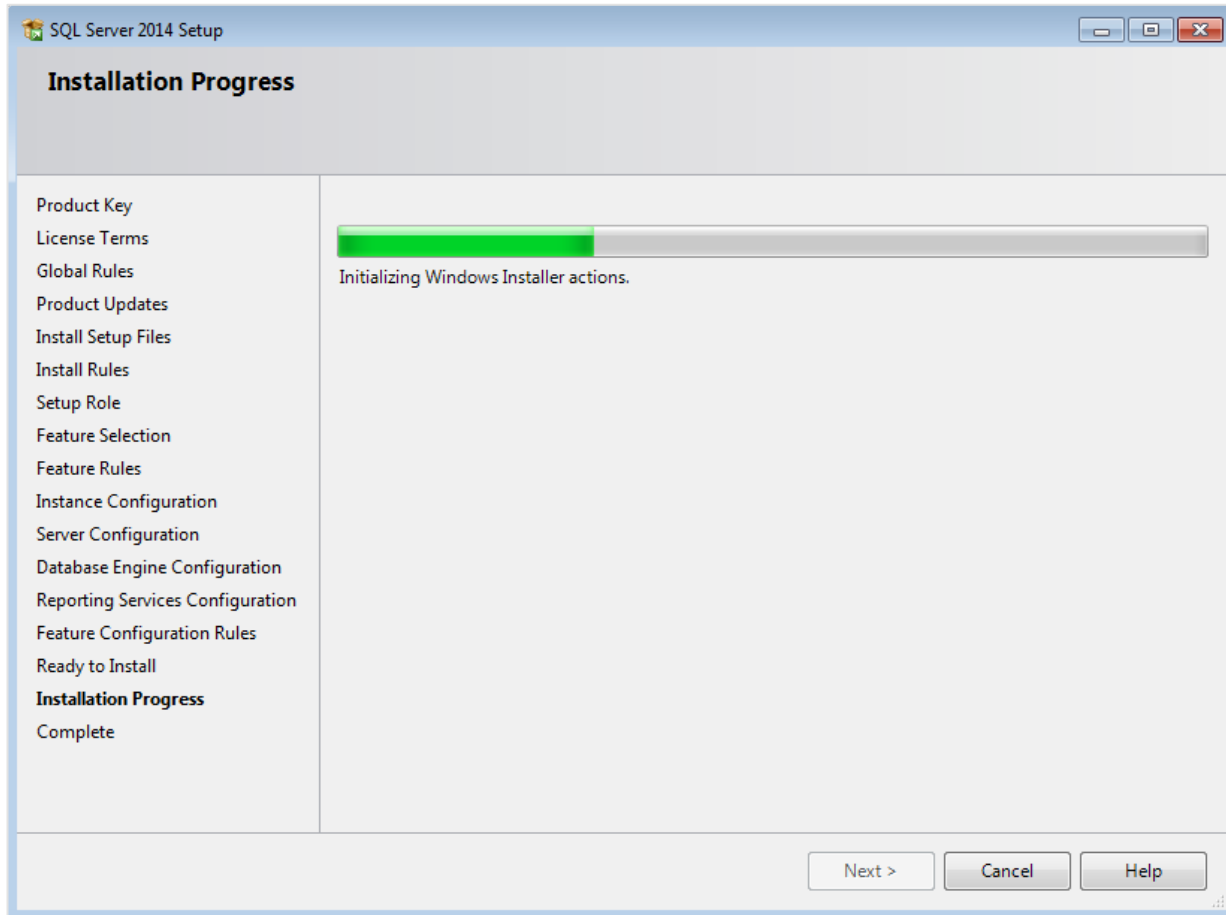
**Note:**

Depending on the situation, it may or may not be necessary to close the installation wizard and restart.

24. Click **Next** to continue. However, this button is available only when no checks have failed.

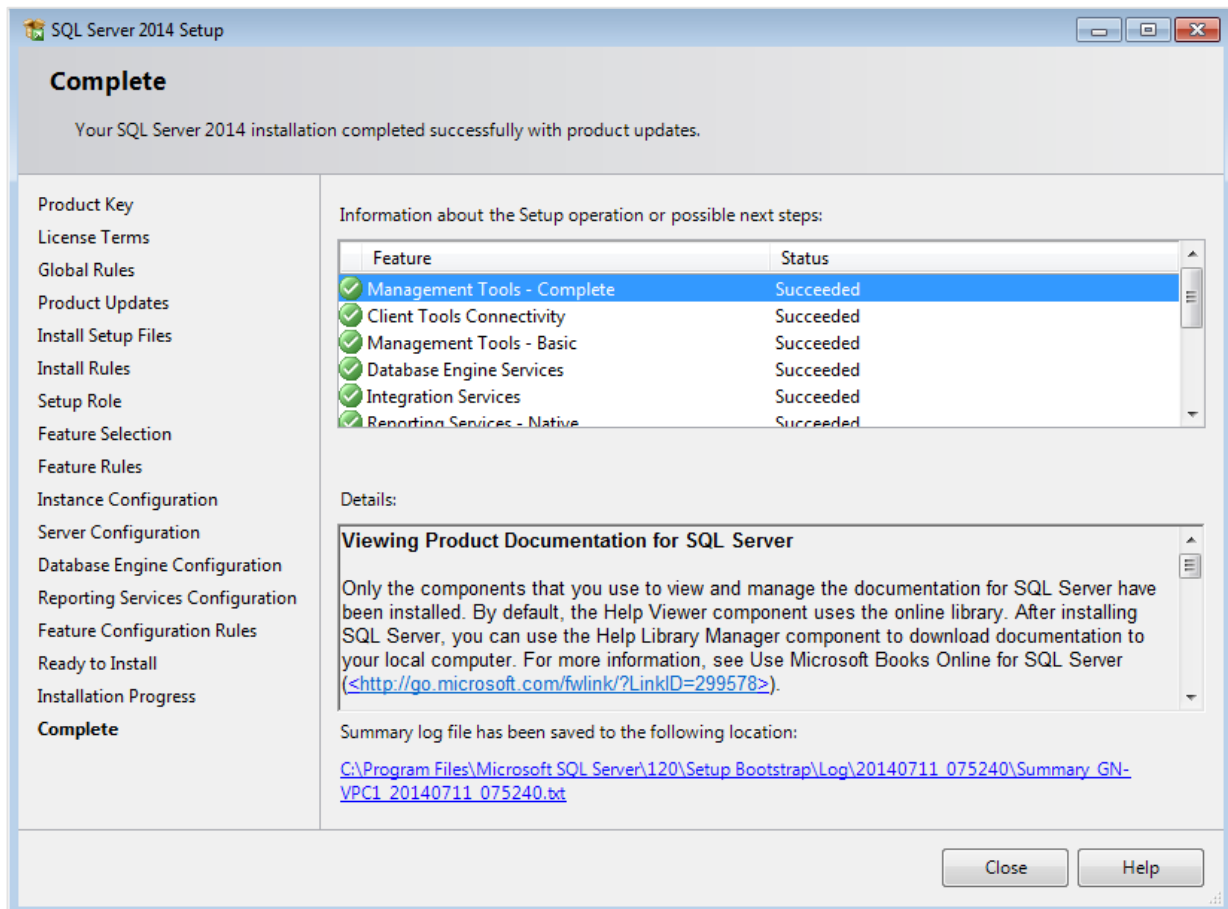


25. In the **Ready to Install** screen, a summary of the defined installation criteria will be displayed. Click **Install** to start the installation.

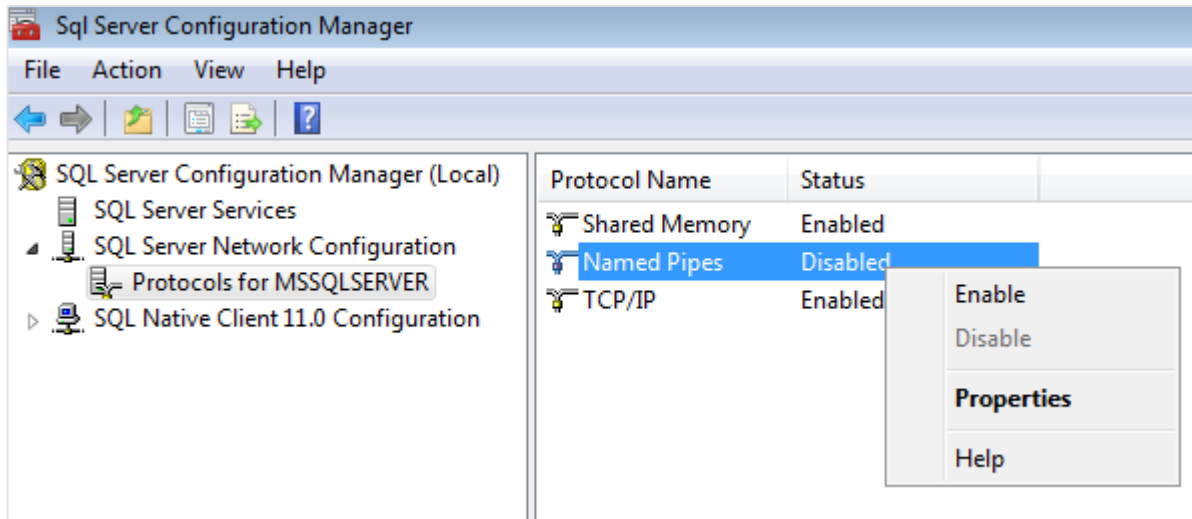




26. The screen displaying the progress of the installation will be displayed. The installation might take some time.



27. As soon as the installation has completed successfully, the installed components are displayed with a green icon. Click **Close** to close the wizard.
28. To be able to access the SQL Server via a network, you have to activate some protocols. When working with a network environment, you have to check if the protocols are activated. If required, activate the protocols.
- Start (on the server where MS SQL Server 2014 is installed) **SQL Server Configuration Manager**. In Windows, go to Start, select **All Programs**, followed by **Microsoft SQL Server 2014**. Click **Configuration Tools**, and then **SQL Server Configuration Manager**.
  - Click **SQL Server Network Configuration**.
  - Select **Protocols for xxxx**. (“xxxx” has to be replaced by the name you have defined for the SQL Server during installation).
  - Right-click the protocols **Named Pipes** and **TCP/IP** and click **Enable** to enable these protocols.



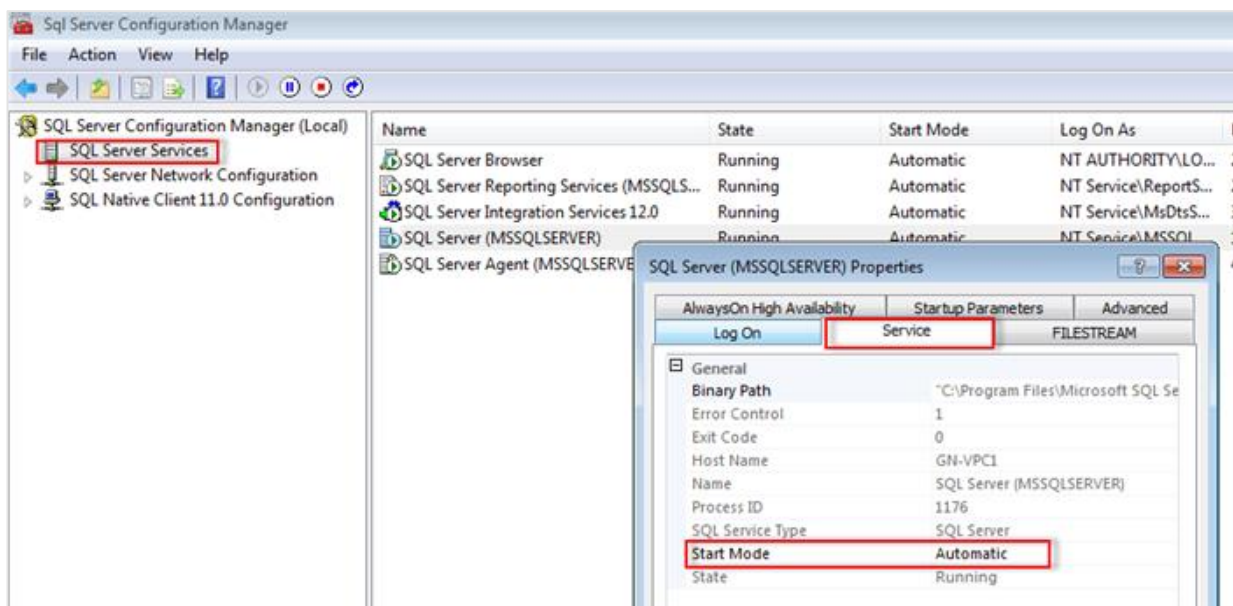
29. You might also need to start the **SQL Server Browser** service. This service is used for identifying the ports that the installation of SQL Server listens to. When this service is not started, you can use the SQL Server only locally. To check if this service is started, follow these steps:

- Start (on the server where MS SQL Server 2014 is installed) **SQL Server Configuration Manager**. In Windows, go to **Start**, select **All Programs**, followed by **SQL Server 2014**. Click **Configuration Tools**, and then **SQL Server Configuration Manager**.
- Click **SQL Server Services**.
- On the right side, the **SQL Server Browser** service is displayed.

#### Note:

When it is not started, the icon is red. When it is started, the icon is green. Ensure that the service starts automatically so that every time the system is restarted, the service will also start.

- Right-click **SQL Server Browser** and select **Properties**.
- In the **SQL Server Browser Properties** screen, click the **Service** tab.
- At **Start Mode**, select **Automatic**, as displayed in the following screen:



- Click **Apply** to apply the changes. The **SQL Server Browser** service will now start automatically every time the system is started.
- Next, start **SQL Server Browser**.
- In the **SQL Server Browser Properties** screen, click the **Log On** tab.
- Click **Start** to start the service. When the **Start** button is inactive, the **SQL Server Browser** service is already started and you do not have to start it.

**Note:**

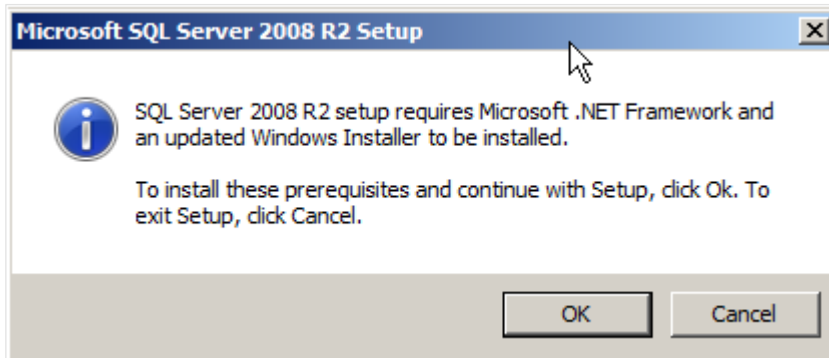
When you have a firewall, you have to configure the firewall to allow connections with SQL Server 2014. The default port for SQL Server 2014 is 1433. The SQL browser used UDP port 1434.

### 2.7.3 Installing Microsoft SQL Server 2008 R2

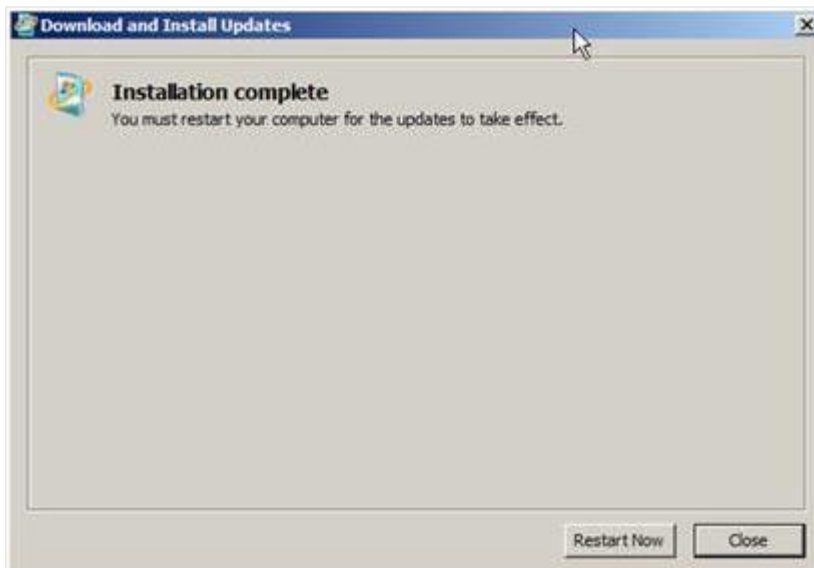
The following describes the installation steps of Microsoft SQL Server 2008 R2 on the Windows Server 2008 R2 platform for the optimum running of Exact Synergy Enterprise.

#### To install Microsoft SQL Server 2008 R2:

1. Insert the SQL Server 2008 R2 installation media. From the root folder, double-click **setup.exe**. This will check the necessary prerequisites in your system. You may be required to install the prerequisites, such as Microsoft .Net Framework version 4.7, or Windows Installer version 4.5. If the **Microsoft SQL Server 2008 R2 Setup** screen is displayed, click **OK** to install the prerequisites. Otherwise, click **Cancel** to exit the SQL Server 2008 R2 installation.



2. Once the installation for the prerequisites is completed, you will need to restart the computer. Click **Restart Now**.



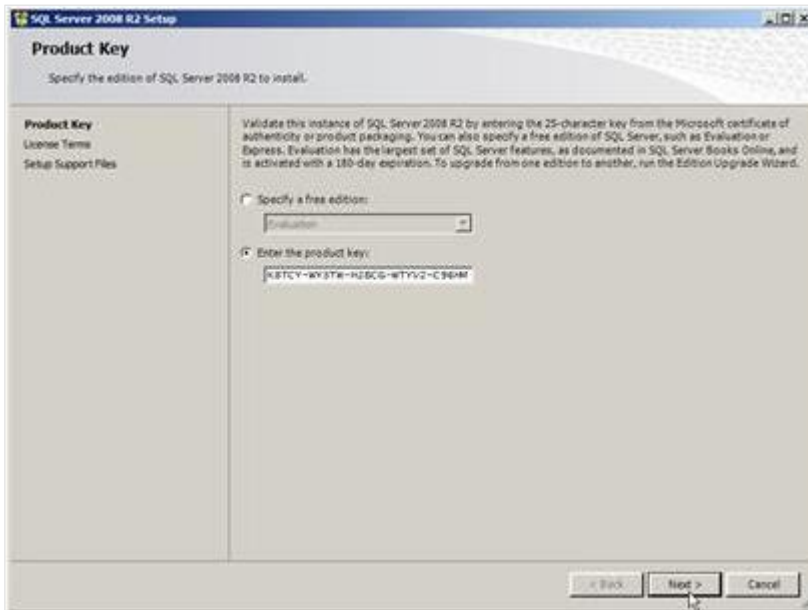
- Restart SQL Server 2008 R2 setup.exe. The **SQL Server Installation Center** page will be displayed. Select **Installation** under the **Planning** section.



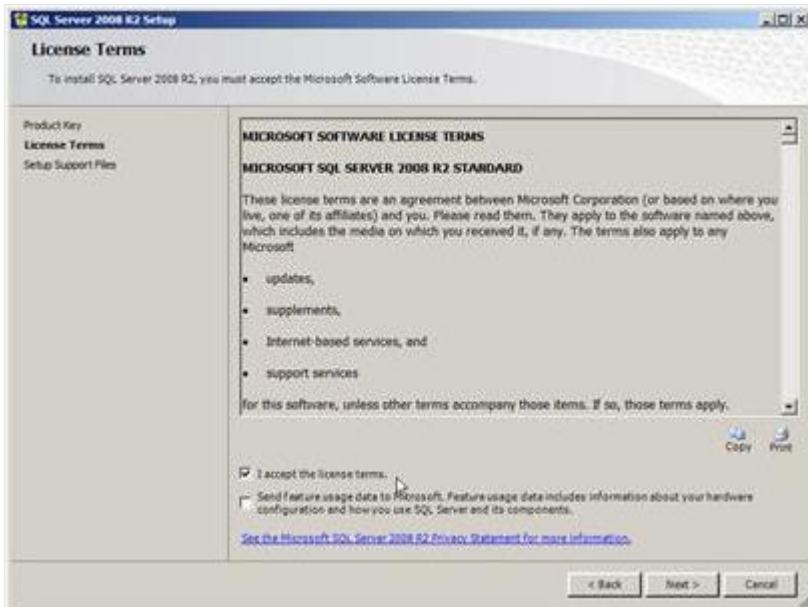
- Click **New installation or add features to an existing installation.** to proceed.



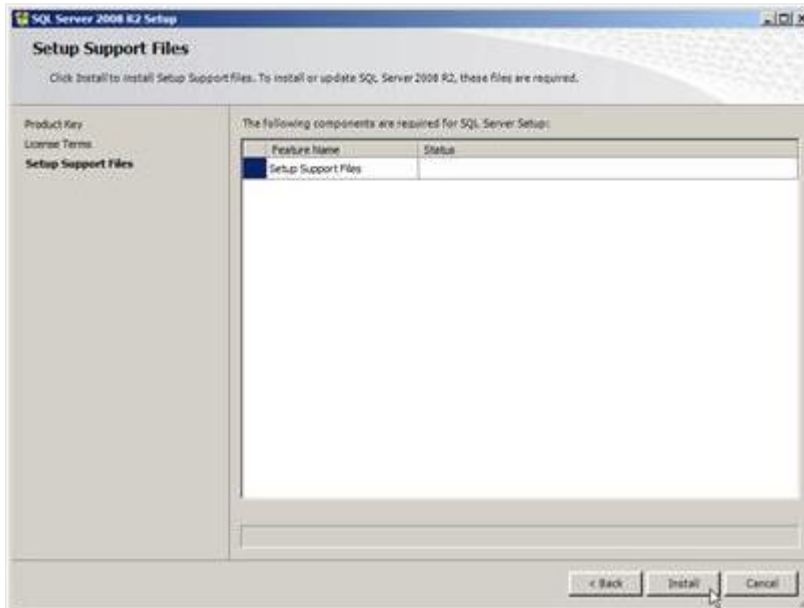
- The **Setup Support Rules** screen will be displayed. Click **OK** to proceed after the scanning is done.
- On the **Product Key** screen at **Enter the product key**, type the product key, and then click **Next**.



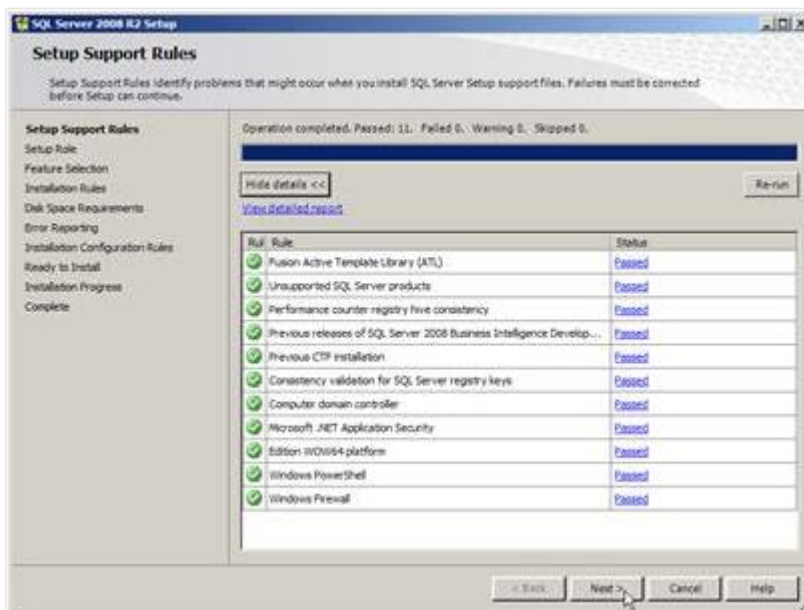
- On the **License Terms** screen, select the **I accept the license terms.** check box and click **Next**.



8. Click **Install** to proceed.



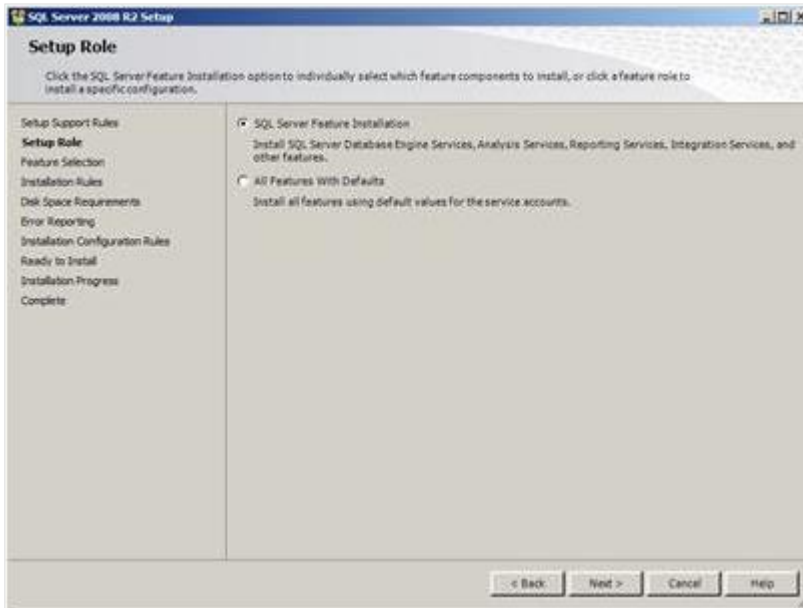
9. Click **Next** to proceed.



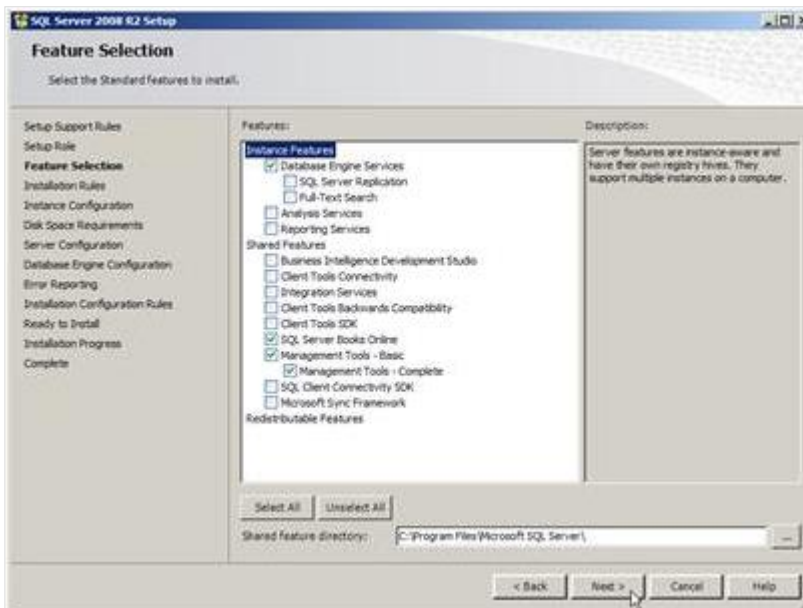
**Caution:**

You might receive a warning on the Windows Firewall. This is normal as, by default, Windows has blocked the TCP port. See <http://msdn.microsoft.com/en-us/library/ms175043.aspx> to learn how to enable the TCP port.

10. On the **Setup Role** screen, select SQL Server Feature Installation, and then click **Next**.

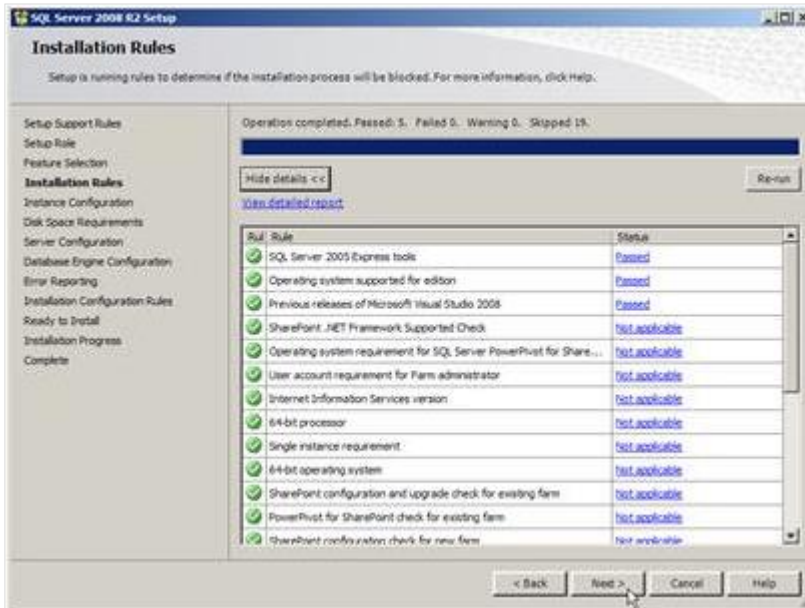


11. On the **Feature Selection** screen, you can select the minimum required features, such as **Database Engine Services, SQL Server Books Online, Management Tools – Basic, and Management Tools – Complete** by selecting the corresponding check boxes. Click **Next** to proceed.

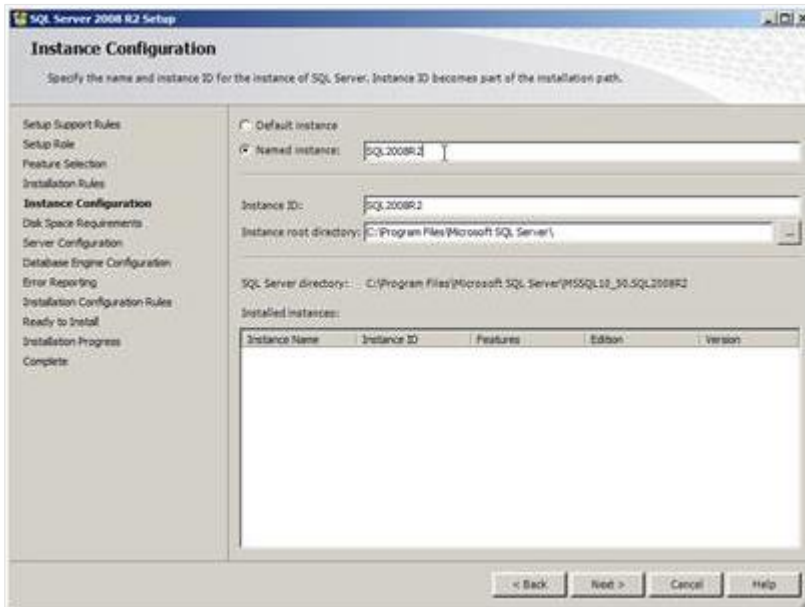




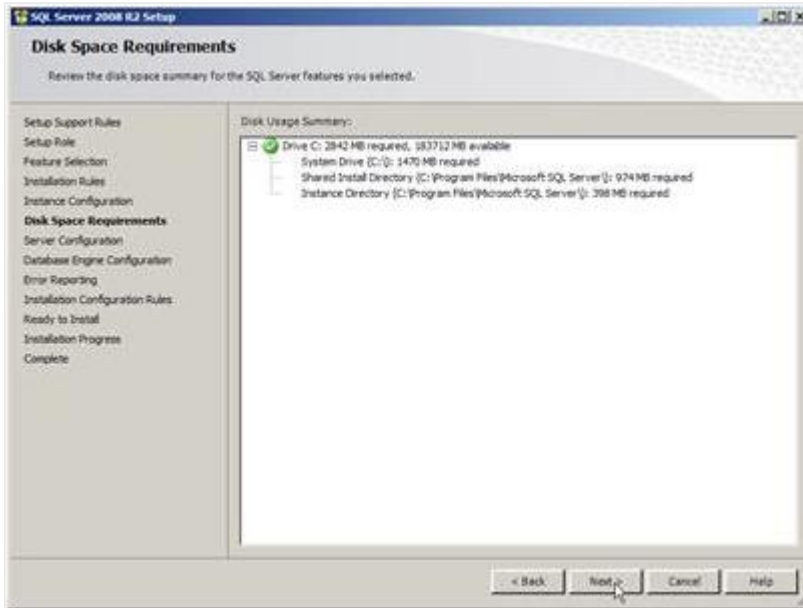
12. Click **Next** to proceed.



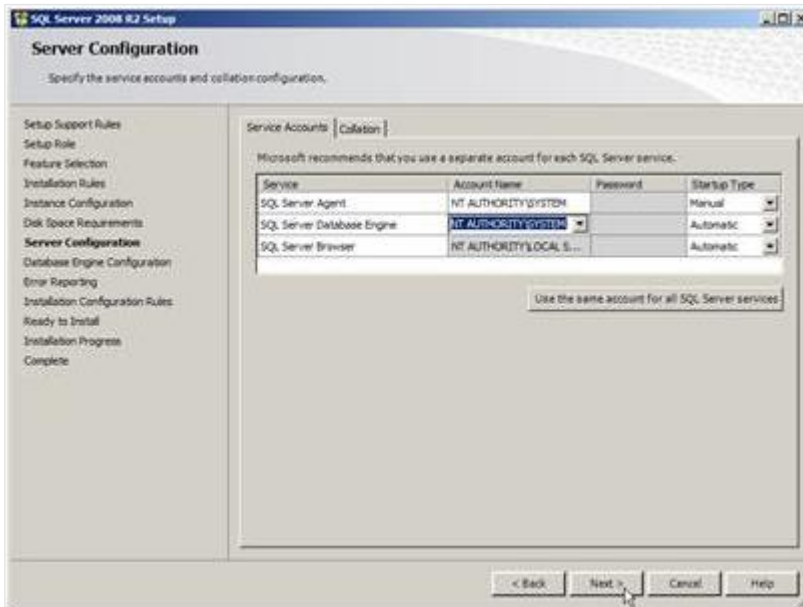
13. Select **Default instance** if you do not have any SQL server instance installed or select **Named instance** if you have an existing SQL server installed. By default, the instance name is used as the instance ID as well. Click **Next** to proceed.



14. The **Disk Space Requirements** screen displays the summary of the disk space required for the installation. Click **Next**.



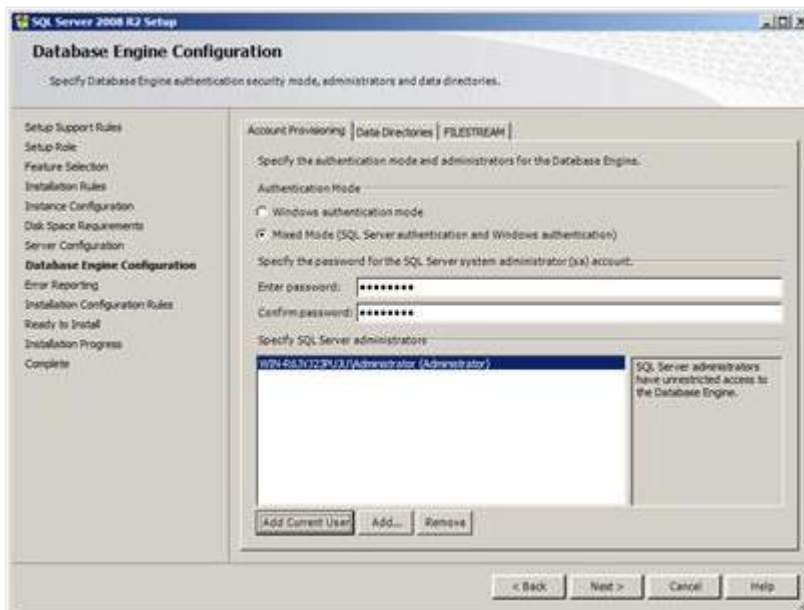
15. Click the **Account Name** column for the **SQL Server Agent** and **SQL Server Database Engine** services and select **NT AUTHORITY\SYSTEM**. Click **Next** to proceed.



**Note:**

If you do not want to use the default regional setting of the system for language, you can select the collation that you want to install by clicking the **Collation** tab and setting the language yourself.

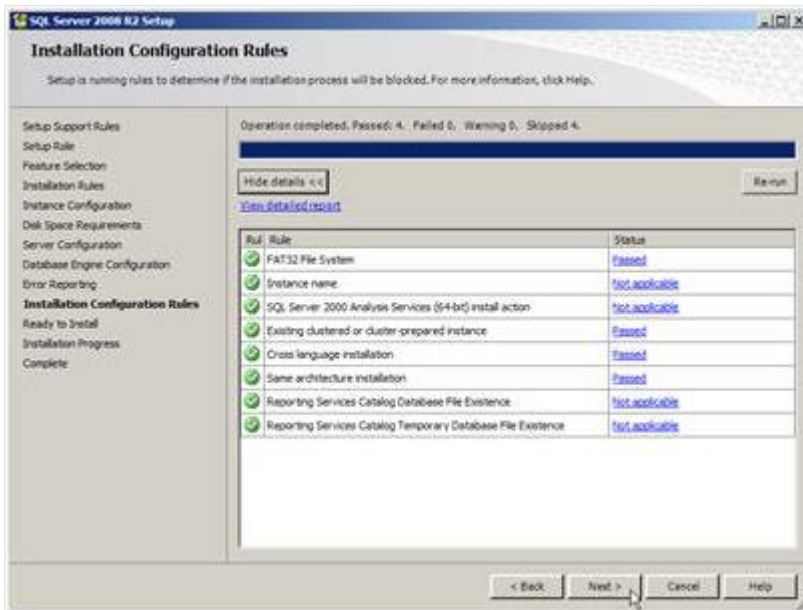
16. Select **Mixed Mode (SQL Server authentication and Windows authentication)** and type the system administrator password at **Enter password**. Then, click **Add Current User** to set yourself as the SQL server administrator. Finally, click **Next** to proceed.



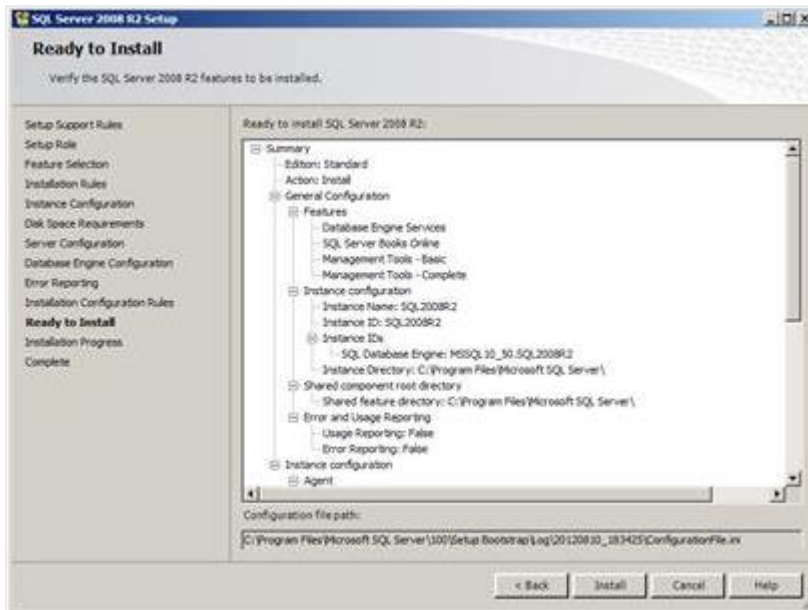
17. Select the options for **Error Reporting** to specify the information that you want to send to Microsoft that will help to improve the SQL Server features and services. Click **Next**.



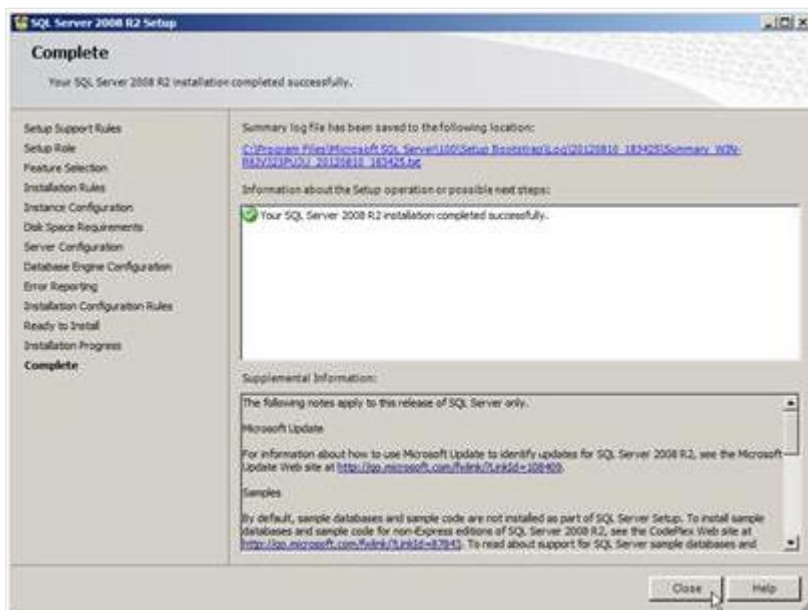
18. Click **Next** to proceed.



19. Click **Install** to proceed.



20. Click **Close** to exit the setup after the installation.



21. Click **X** at the top right corner to close the **SQL Server Installation Center**.

## 2.7.4 Installing Microsoft SQL Server 2016

In a standalone environment, you have to perform these steps on the workstation where you work with Exact Globe Next. In all other cases, you have to perform these steps on the server.

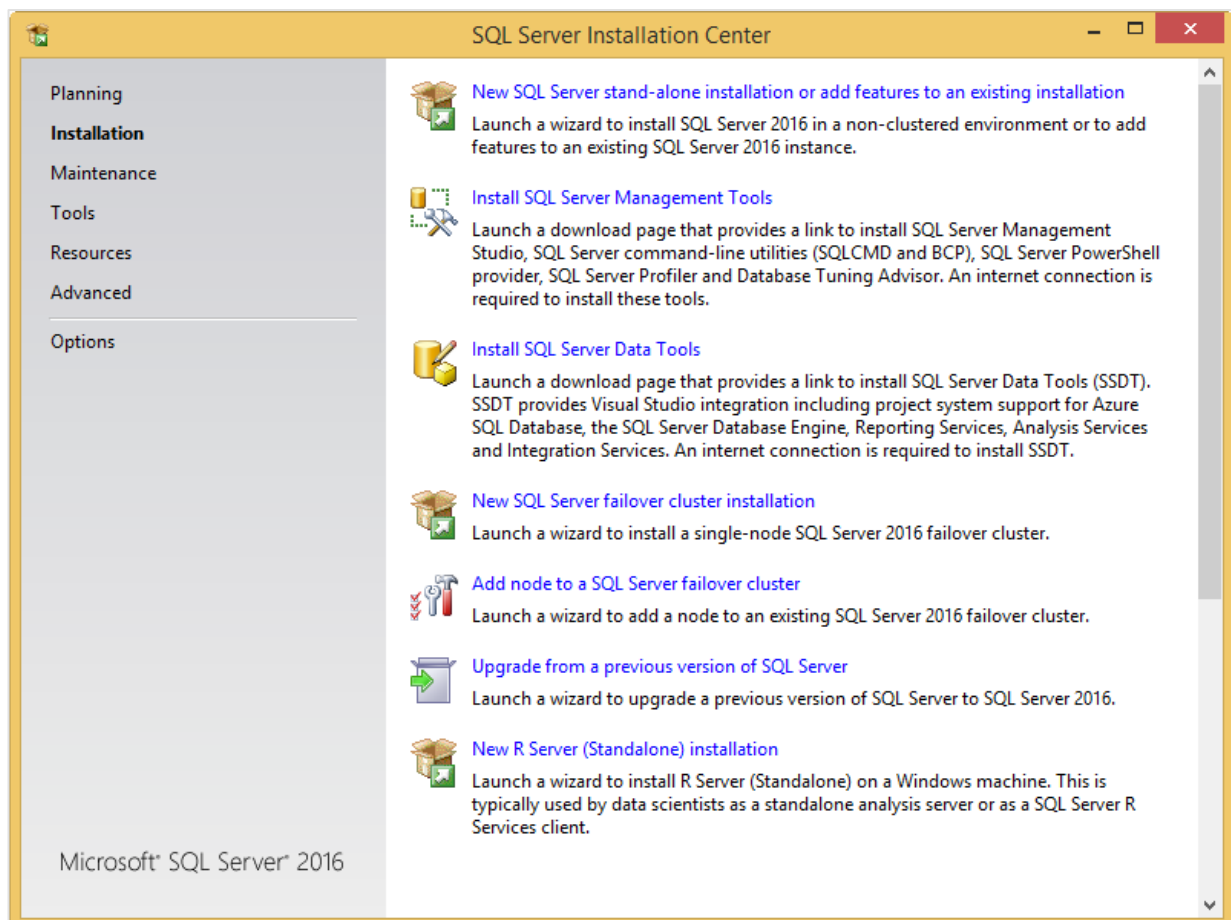
When working in a standalone environment, you will have one computer on which you are working with Exact Globe Next. On this computer, both Exact Globe Next and the SQL Server are installed. This is seen as a standalone even when your computer is part of a network, as all software needed to work with Exact Globe Next are installed on this one computer.

Before installing the SQL Server, check the system requirements for the specific SQL Server edition at [https://msdn.microsoft.com/en-us/library/ms143506\(v=sql.130\).aspx](https://msdn.microsoft.com/en-us/library/ms143506(v=sql.130).aspx).

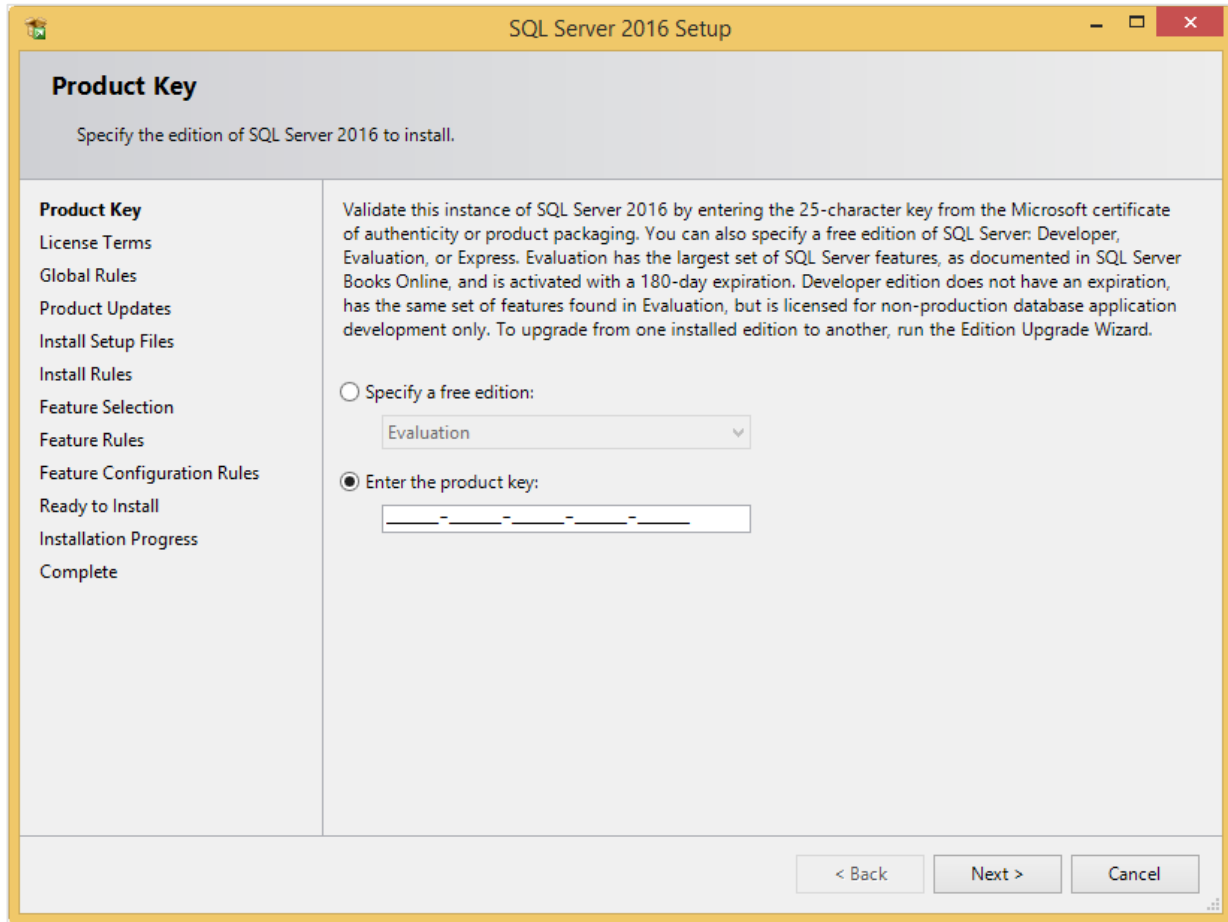
When these requirements are met, you can start installing SQL Server 2016.

### To install Microsoft SQL Server 2016:

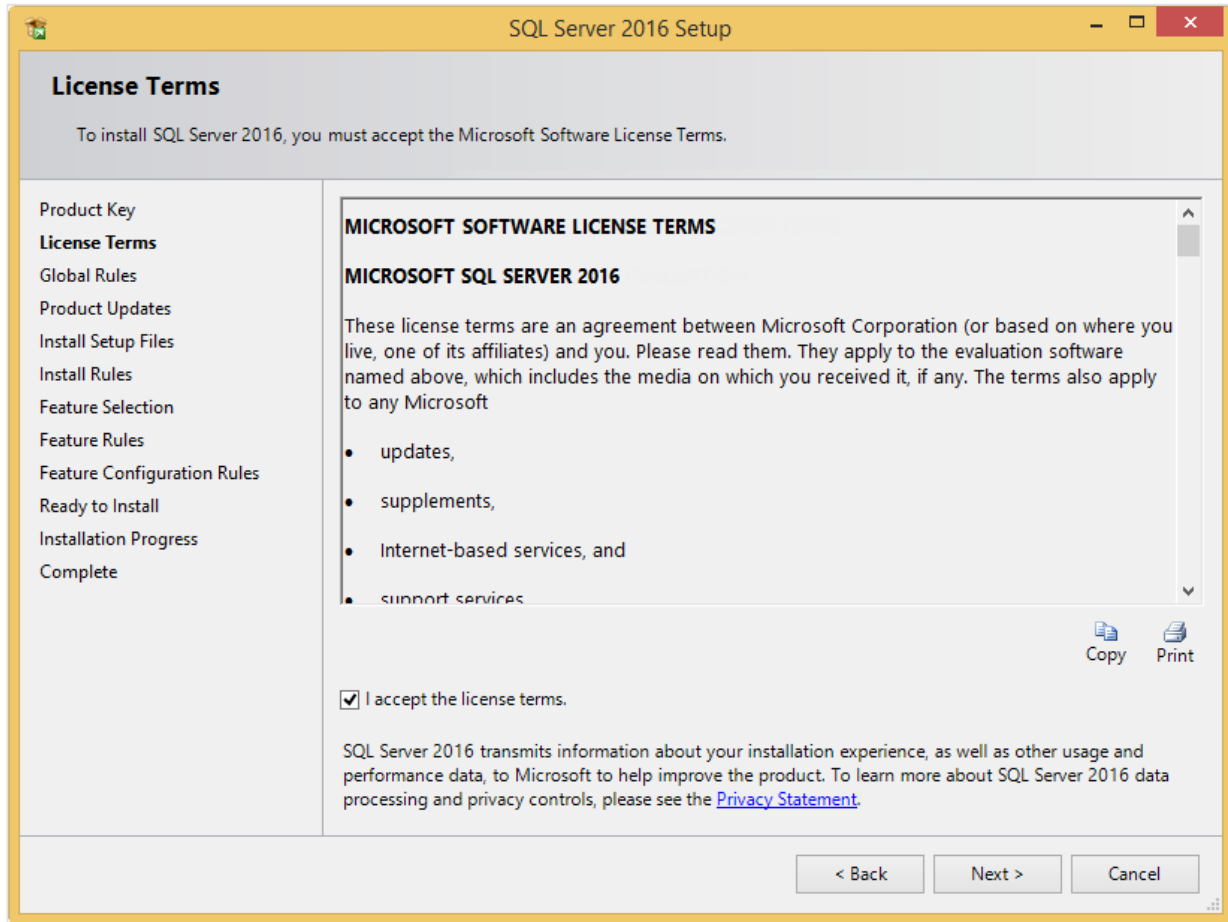
1. Log in as an administrator on the server (of a workstation in case of a standalone installation).
2. Insert the SQL Server installation DVD into your DVD drive. When the autorun is not performed, open the DVD drive in Windows Explorer and start the installation by clicking **Setup.exe**.
3. The **SQL Server Installation Center** screen will be displayed. In this screen, you can view and execute several installation tasks.



4. Click **Installation** on the left panel. Next, click **New SQL Server stand-alone installation or add features to an existing installation**.

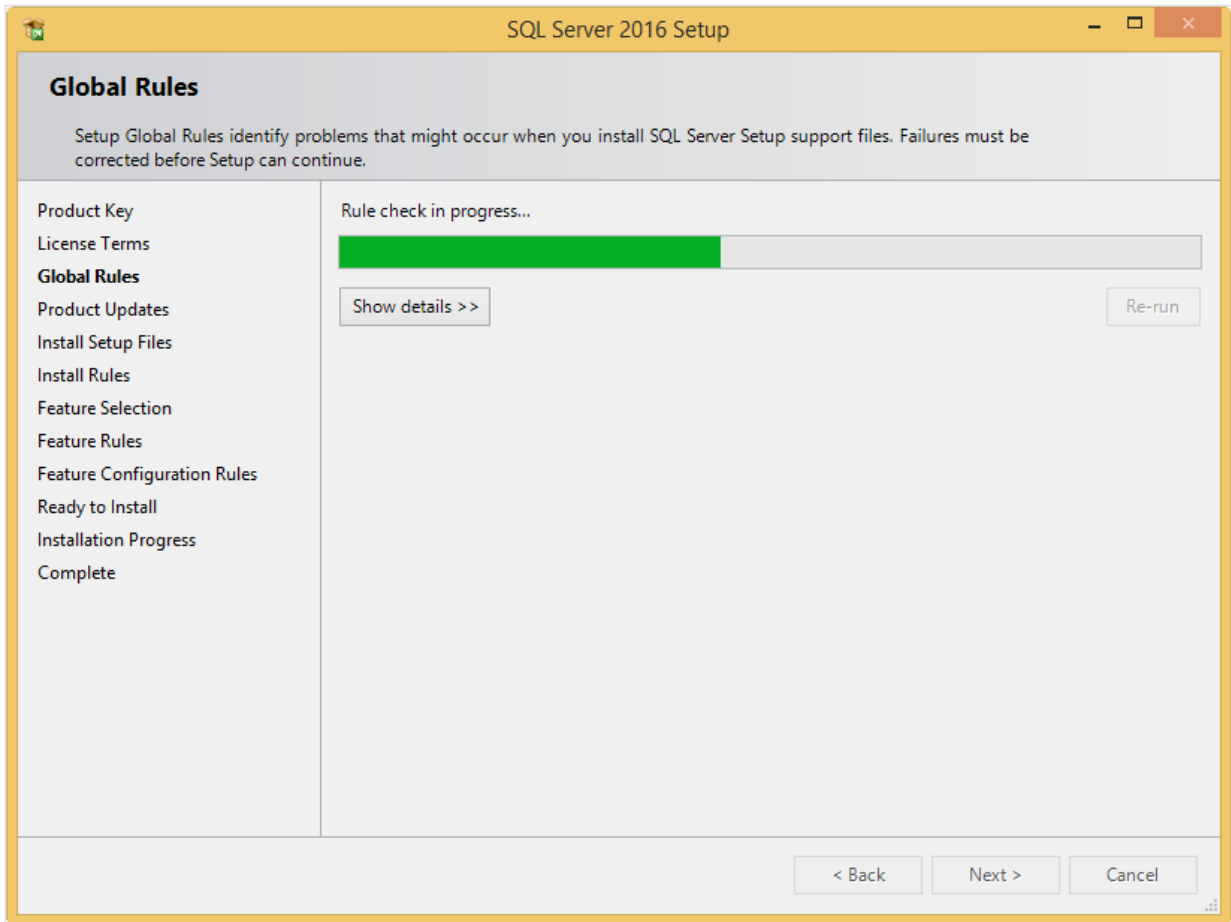


5. In the **Product Key** screen, type the product key at **Enter the product key** if the product key is not filled automatically. Click **Next** to continue. The screen with the license terms will be displayed.





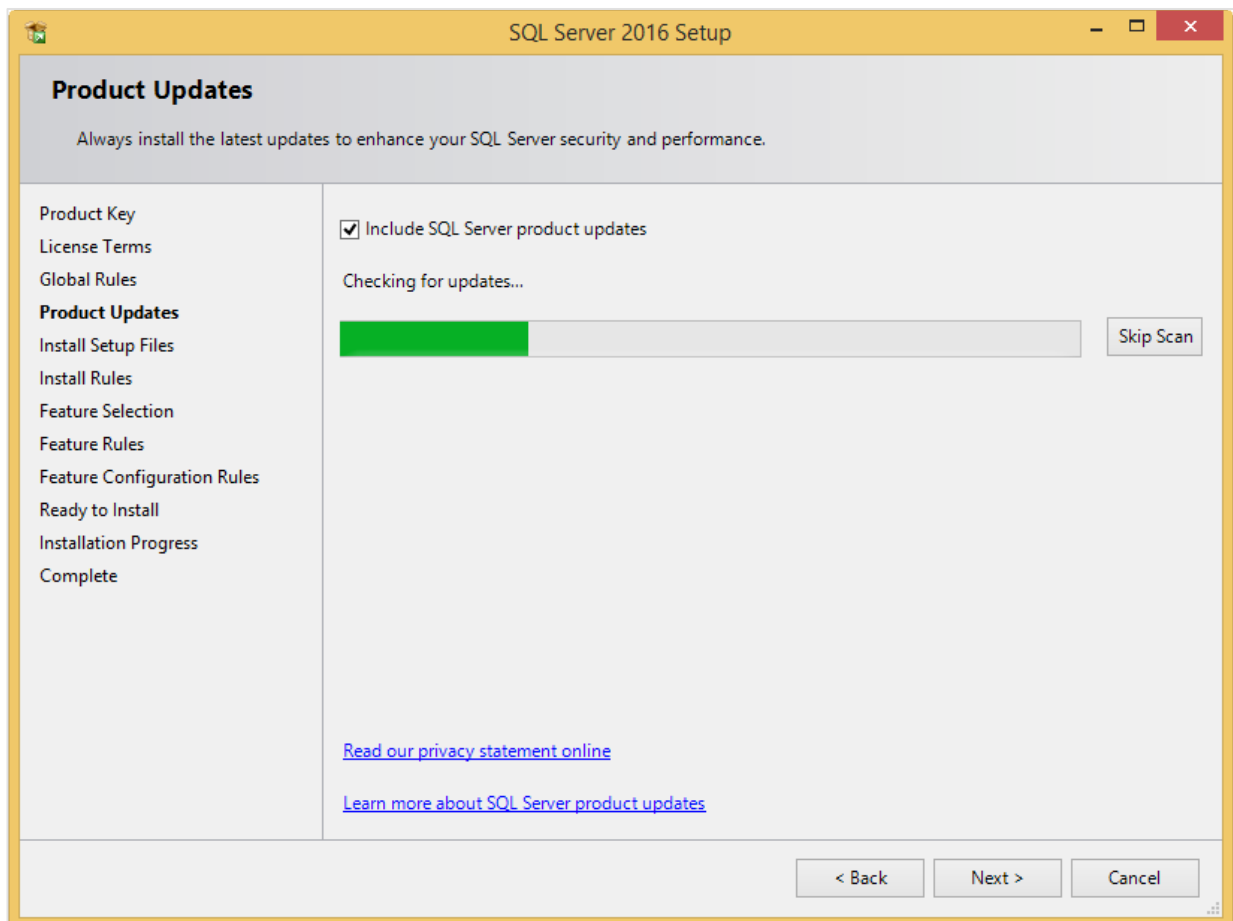
- To continue, select **I accept the license terms** and click **Next**.



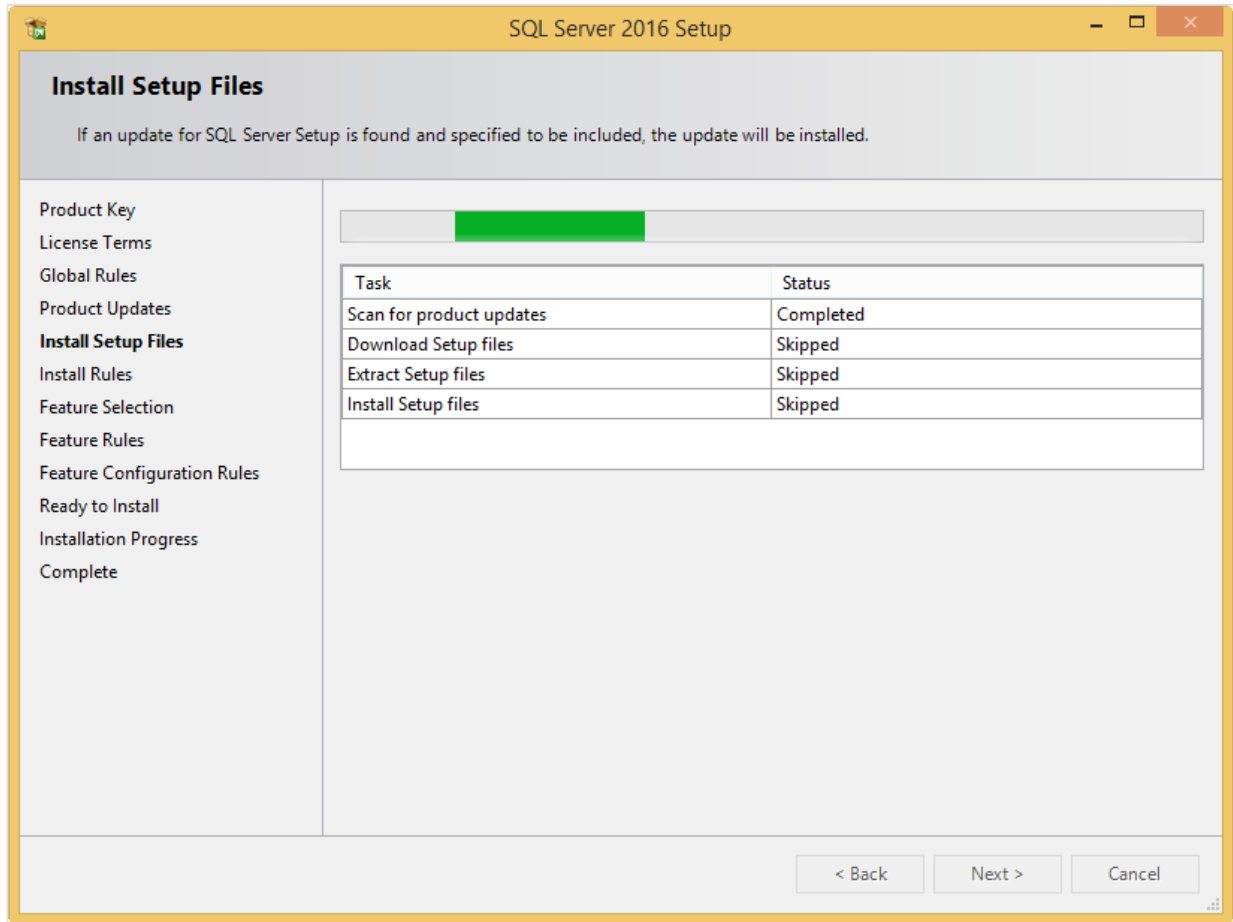
- Checks will be performed to identify possible problems when installing the SQL Server Setup support files. The SQL Server Setup support files are needed for the installation of MS SQL Server 2016 and are automatically installed via this installation wizard. Click **Show details >>** to view the details of these checks. When all checks are passed, the results are displayed in this screen. When a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and the error. After solving the issue, click **Re-run** to perform the checks again.

**Note:**

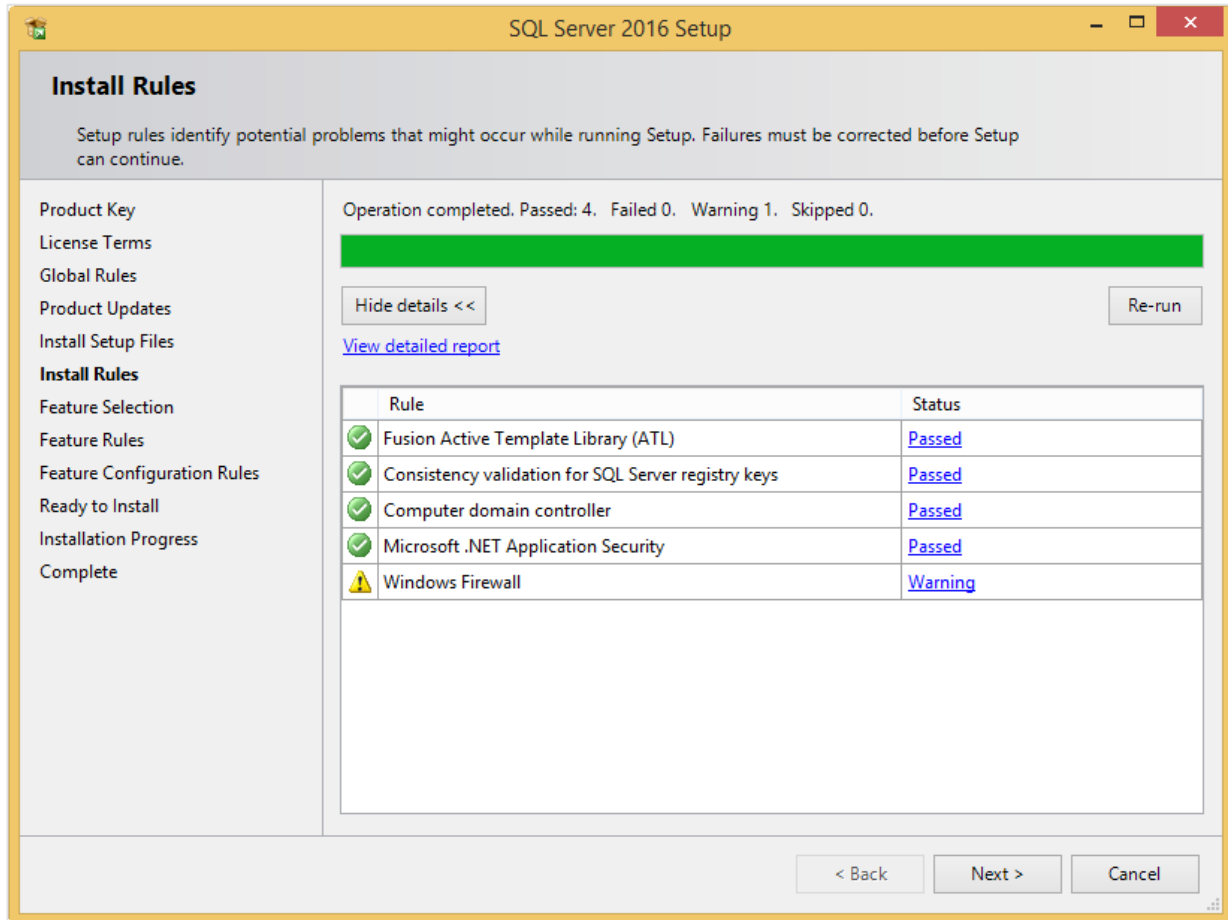
It is possible that some warnings are displayed regarding the firewall. In spite of the warnings, it is still possible to continue with the installation. Depending on the situation, it may or may not be necessary to close the installation wizard and restart. When all checks are passed, this screen will close automatically and the next screen will be displayed.



- The **Product Updates** screen allows you to check for new update files online. However, you can click **Skip Scan** to skip this step. Click **Next** to continue.



9. The installation wizard will check for updates and install the available update files. As soon as this is done, the screen will close automatically and the next screen will be displayed:

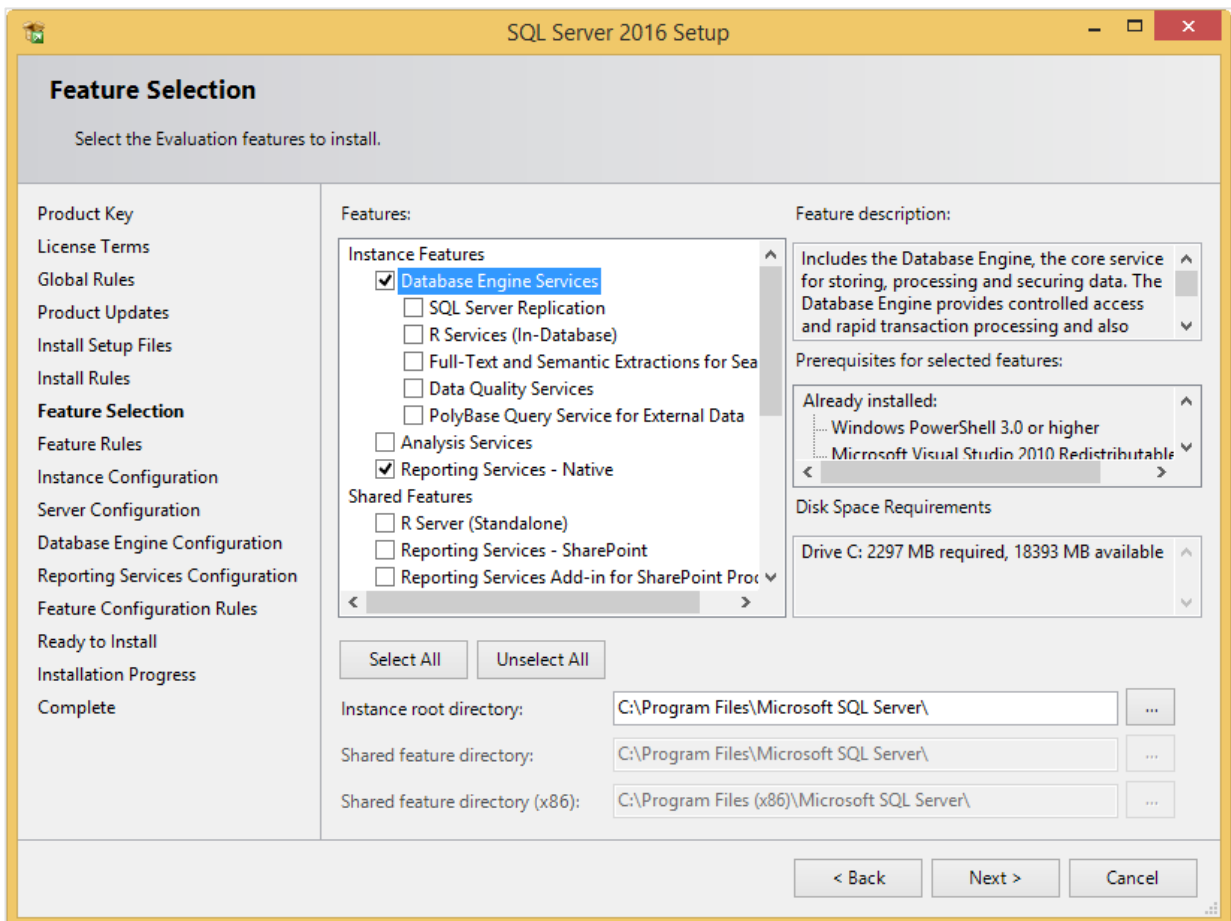


10. Checks will be performed to identify potential problems that might occur during the installation. Click **Show details >>** to view the details of these checks. When a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and the error. After solving the issue, click **Re-run** to perform the checks again.

**Note:**

Depending on the situation, it may or may not be necessary to close the installation wizard and restart.

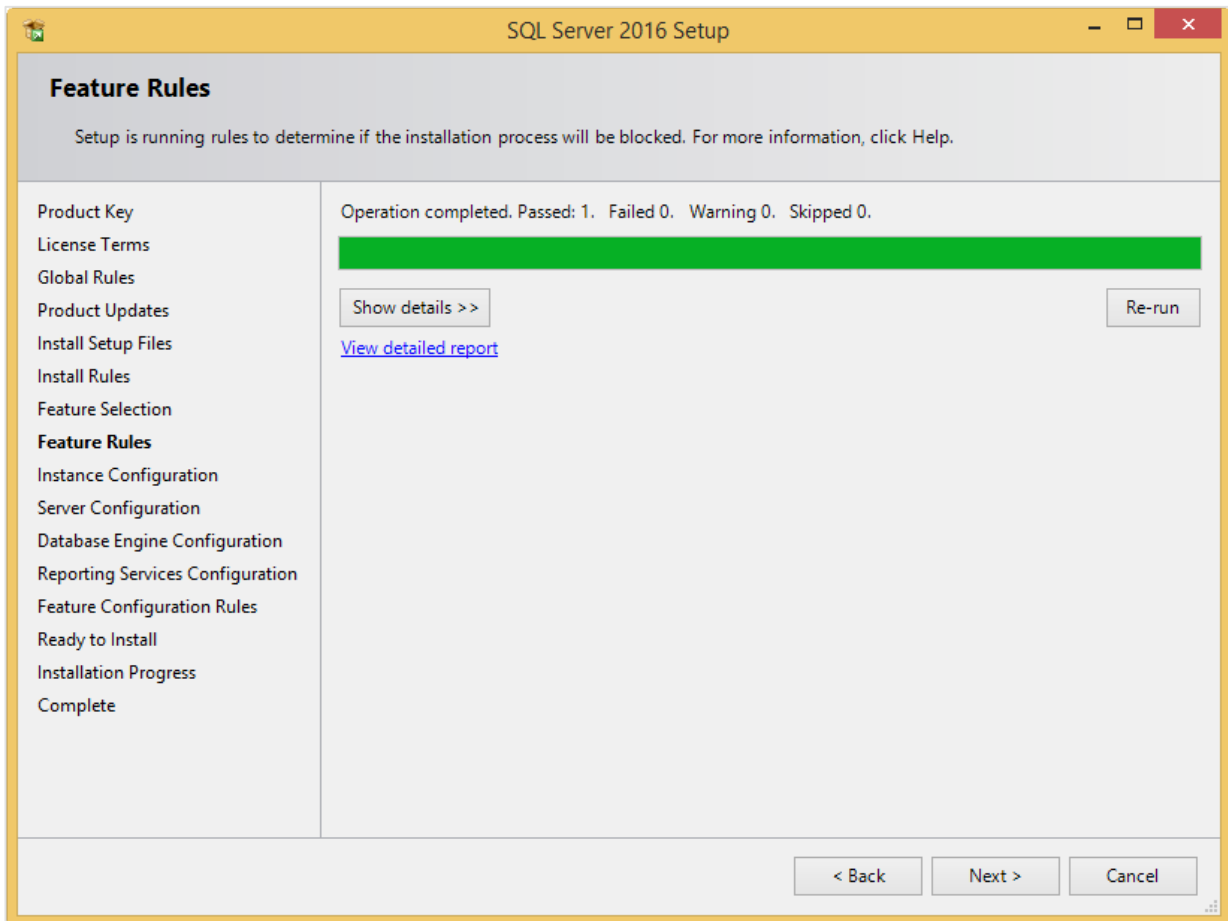
11. Click **Next** to continue. However, the **Next** button is available only when no checks have failed.



12. Select the features to install. When you select a feature, the corresponding information about this feature will be displayed on the right. Select the following features:

- Database Engine Services
- Reporting Services — Native (applicable only when you are using SQL Server Reporting services and/or Exact Globe Next with extended functionality)
- Client Tools Connectivity
- Integration Services
- Documentation Components

Besides selecting the features, you do not have to change anything else. Click **Next** to continue.

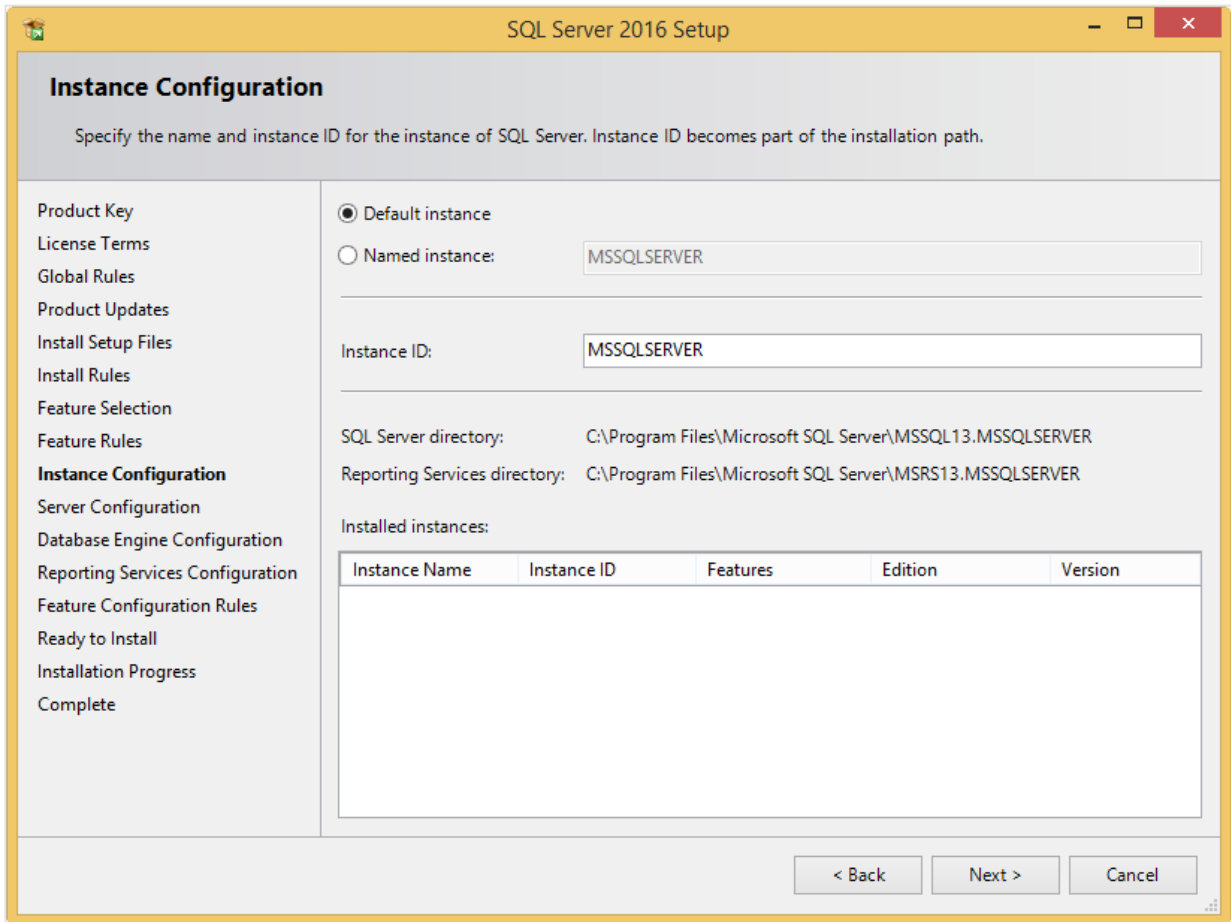


13. Checks will be performed to identify issues that might block the installation. Click **Show details >>** to view the details of these checks. When a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and the error. After solving the issue, click **Re-run** to perform the checks again.

**Note:**

Depending on the situation, it may or may not be necessary to close the installation wizard and restart.

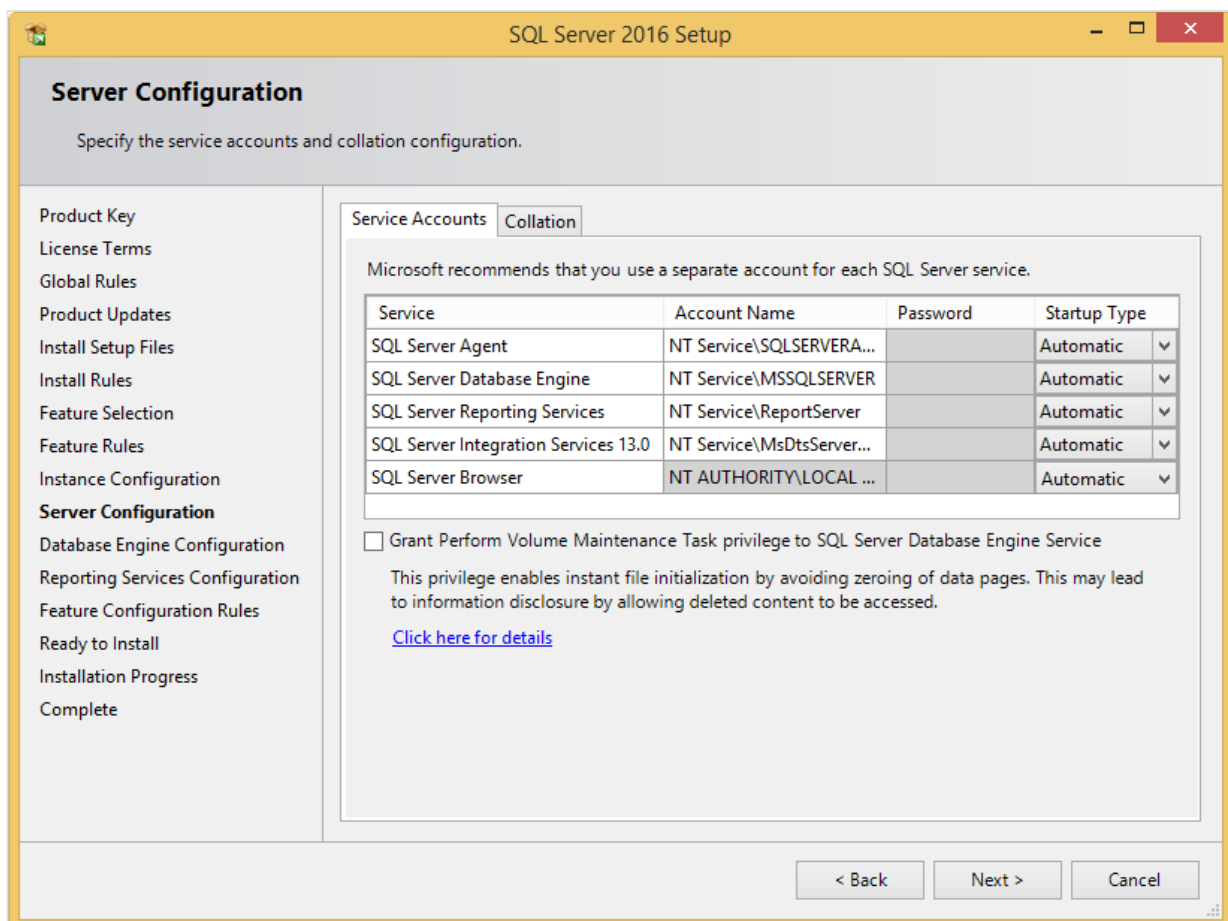
14. Click **Next** to continue. However, the **Next** button is available only when no checks have failed.



15. When the actions in the previous screen are completed, the screen will close automatically and the next screen will be displayed. In the **Instance Configuration** screen, define a name for the instance. This is the name for your SQL Server. Click **Next** to continue.

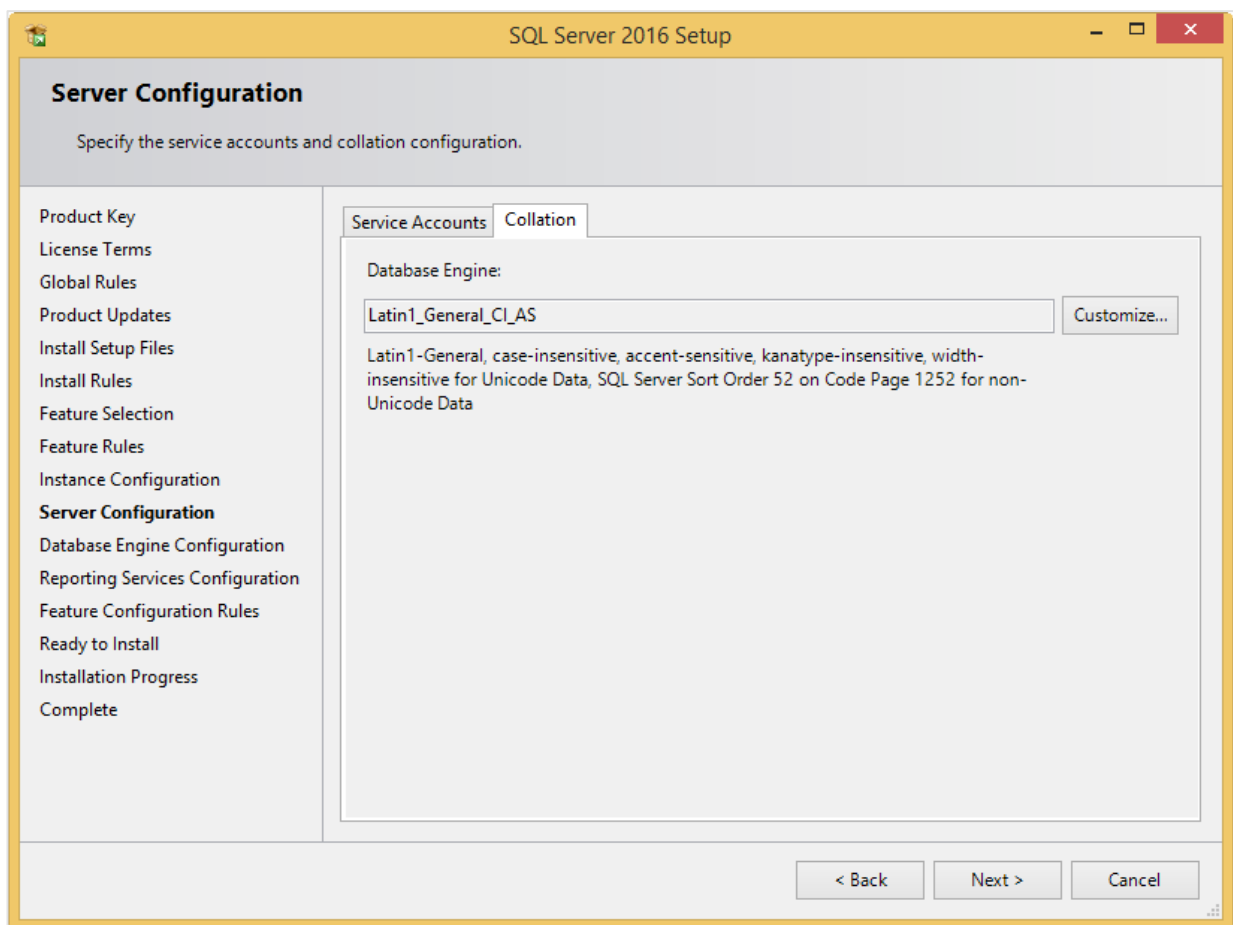
**Note:**

- **New installation** — When it is a new installation, there is no SQL Server present in your system yet. In this case, select **Default instance**. There is no need to change anything else in the screen. At the bottom of the screen, you can see if there are already other SQL Server instances present. When this is a new installation in a system where no SQL Server is present yet, this part of the screen is empty.
- **Installing new instance** — When there are existing SQL Server installations present, you have to select **Named instance** and define a name in the box next to it, for example “SQL2016”. The name defined here has to be unique and cannot be the same as any of the names of the other instances that are already present on your system. The field **Instance ID** will be filled automatically and you do not have to change this manually. At the bottom of the screen, you can see if any other instances are present.

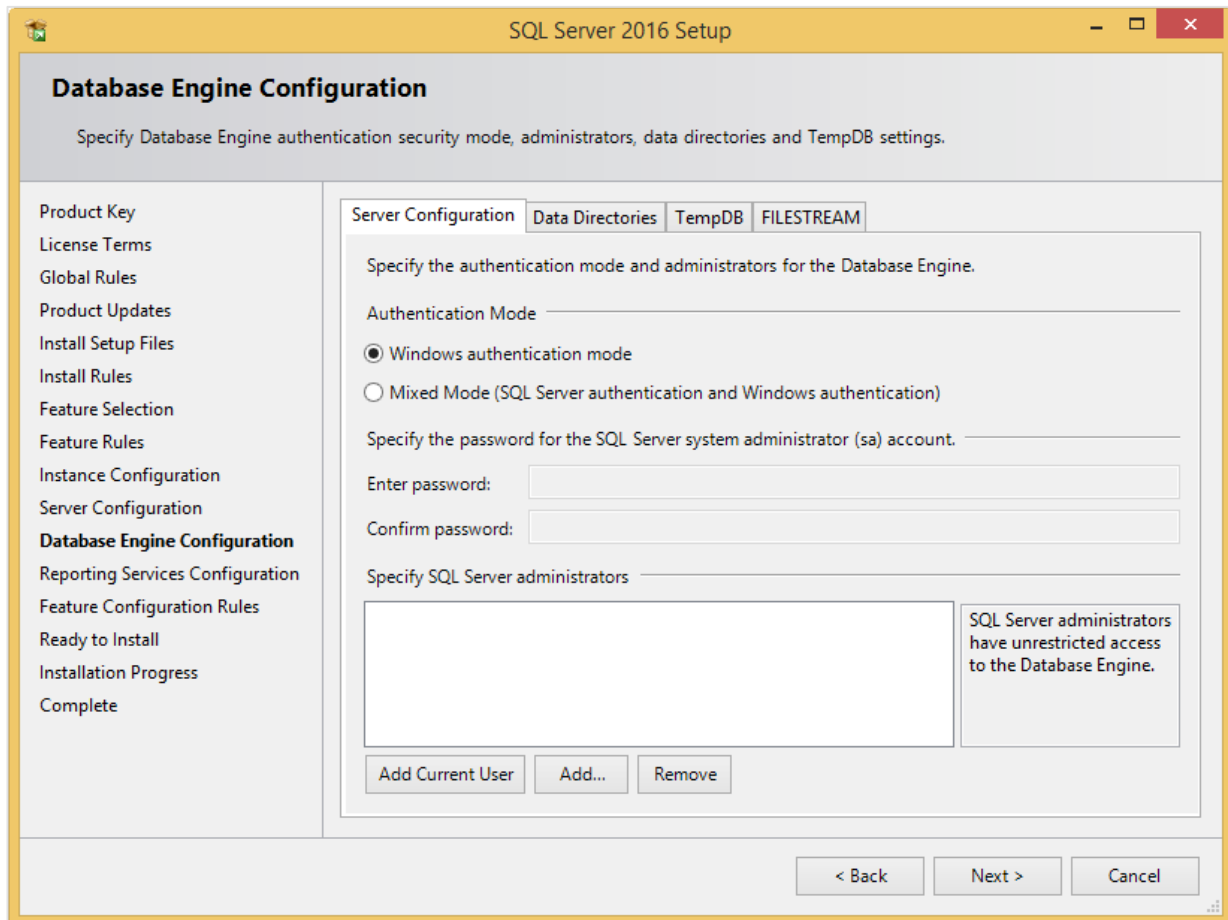




16. In this screen, under the **Service Accounts** tab, you can define which account you want to use for starting the MS SQL Server 2016 services. For a standard installation, accept the data as suggested in the screen. Keep in mind that when you select a user for which the password regularly changes, you will also have to change the password in the services every time. If you forget to change the password in the services, the services cannot be started and you will not be able to use the SQL Server until you have updated the password in the services, and have started the services. Depending on the account selected at **Account Name**, you have to enter the corresponding password at **Password**.
17. In the **Startup Type** column, you can define that the service has to start automatically when the system starts. The **SQL Server Database Engine** is the SQL Server itself. This service should always be started in order to use the SQL Server.  
The **SQL Server Browser** service is a service that is used for identifying the ports that the installation of SQL Server listens to. This service needs to be started to enable network access. The **Startup Type** option of this service should be **Automatic**. The account name of this service cannot be changed.



18. Under the **Collation** tab, you can define the collation (character set) settings. For Western European countries, you can accept the collation as displayed in the screen. Click **Next** to continue. The following screen will be displayed:



19. Under the **Server Configuration** tab, define how you would like to log on to the SQL Server. When you are working with Exact Synergy Enterprise and/or Exact Globe Next with extended functionality, select **Mixed Mode (SQL Server authentication and Windows authentication)**. Type your password at **Enter password** and **Confirm password**. This password is a password that will be used for the SA user; this default user is the System Administrator within the SQL Server. If you select **Windows authentication mode**, you do not have to type a password.

**Note:**

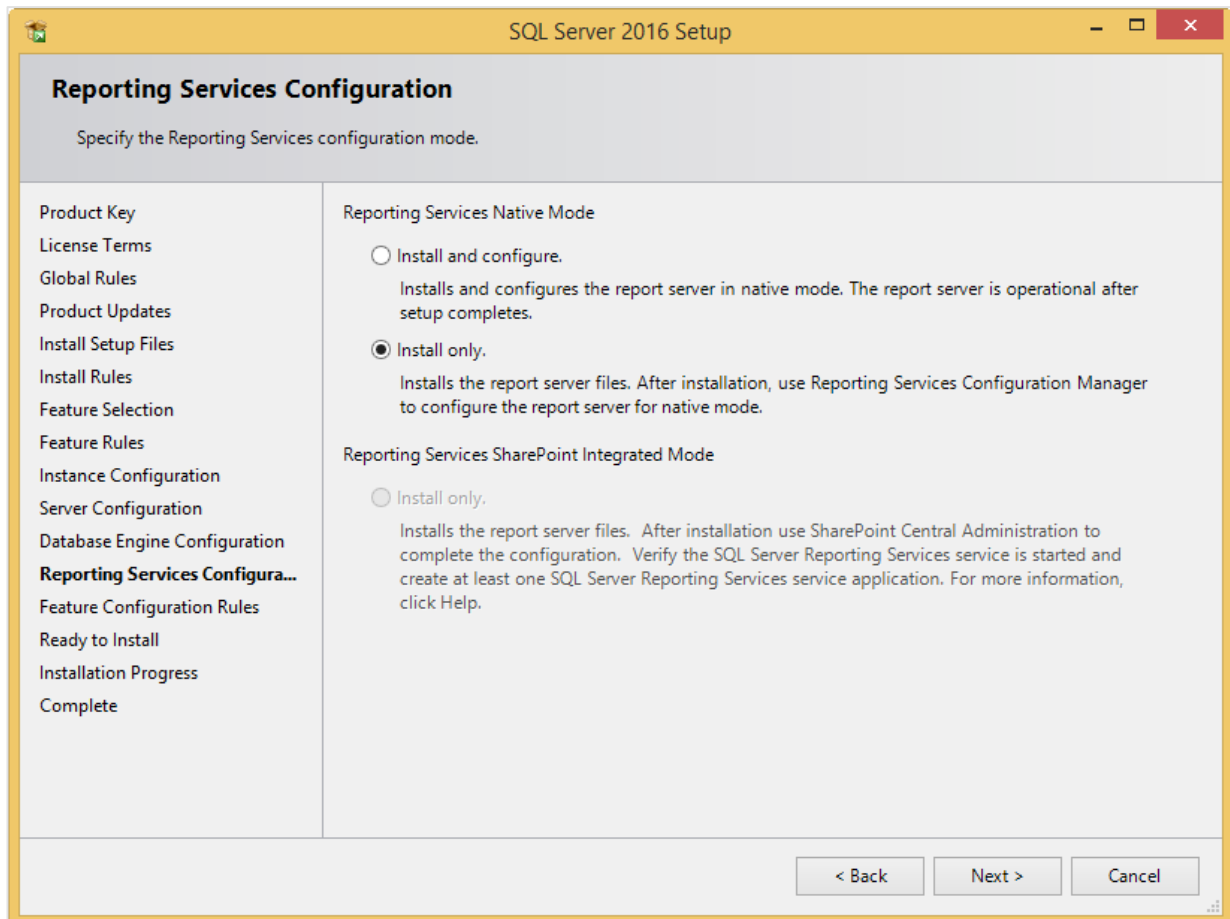
Regardless of which Exact product you use, you will always have to define one user or more at the bottom of the screen. These users will be administrators on the SQL Server. You have to select at least one user. This user will be the administrator on the SQL Server and can also add other users later on.

20. Click **Add Current User** to add the users that are currently performing the installation as an administrator. Click **Add** to add other users or **Remove** to remove selected users.

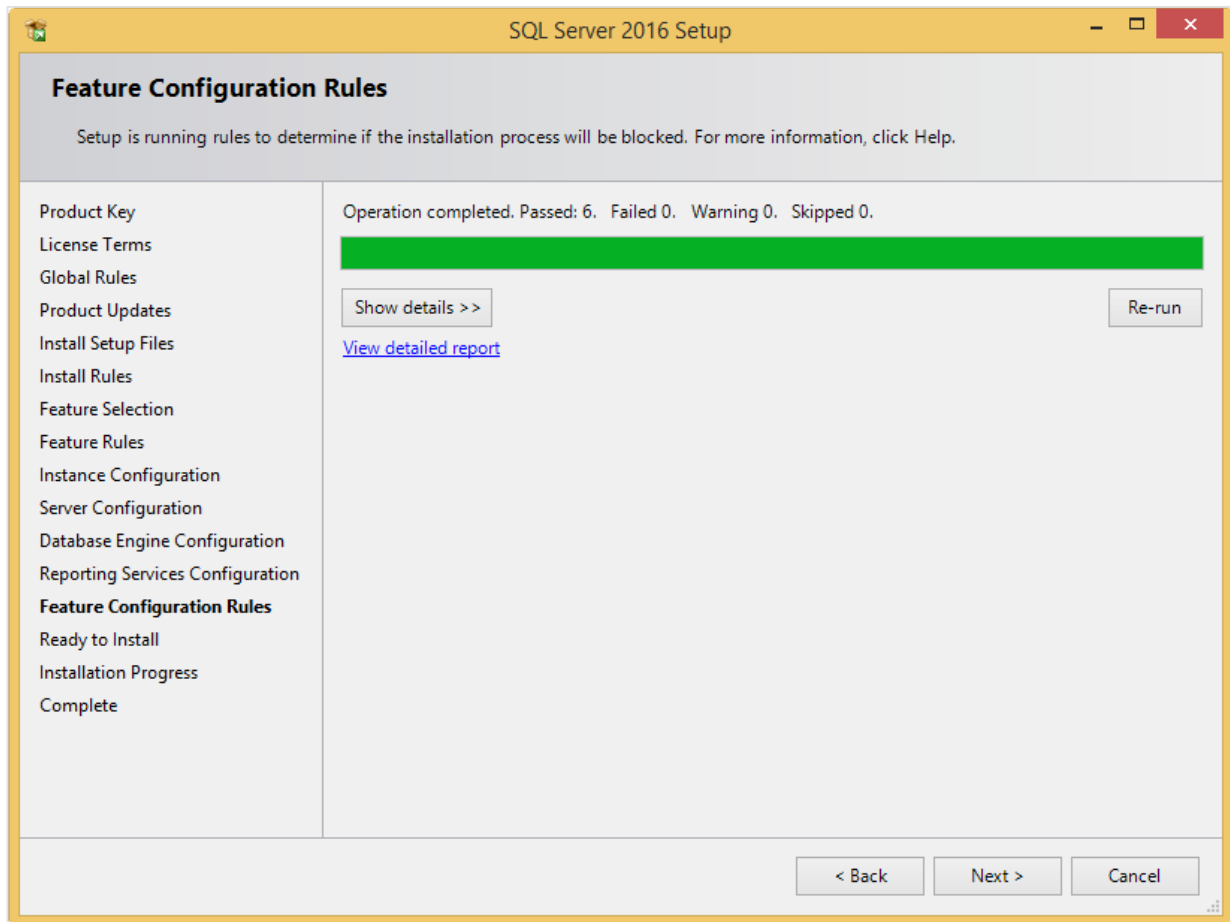
21. Click **Next** to continue.

**Note:**

The following screen will be displayed only if you have selected the **Reporting Services – Native** feature.



22. In this screen, define if you want to configure the reporting services feature now or if you want to configure it later. Select **Install only** to install the feature and configure it later. Click **Next** to continue.

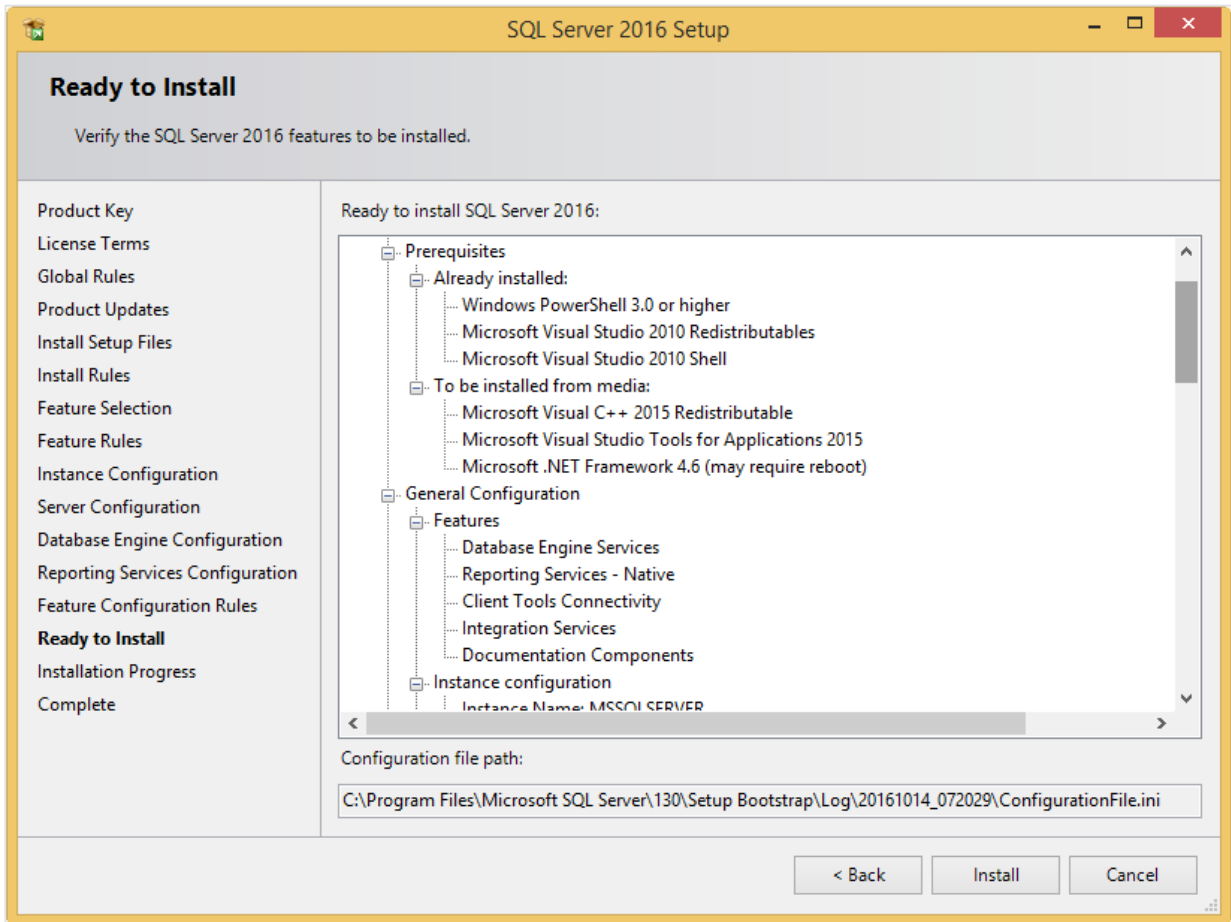


23. In the **Feature Configuration Rules** screen, checks will be performed for problems that might occur during the installation. Click **Show details >>** to view the details of these checks. When a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and the error. After solving the issue, click **Re-run** to perform the checks again.

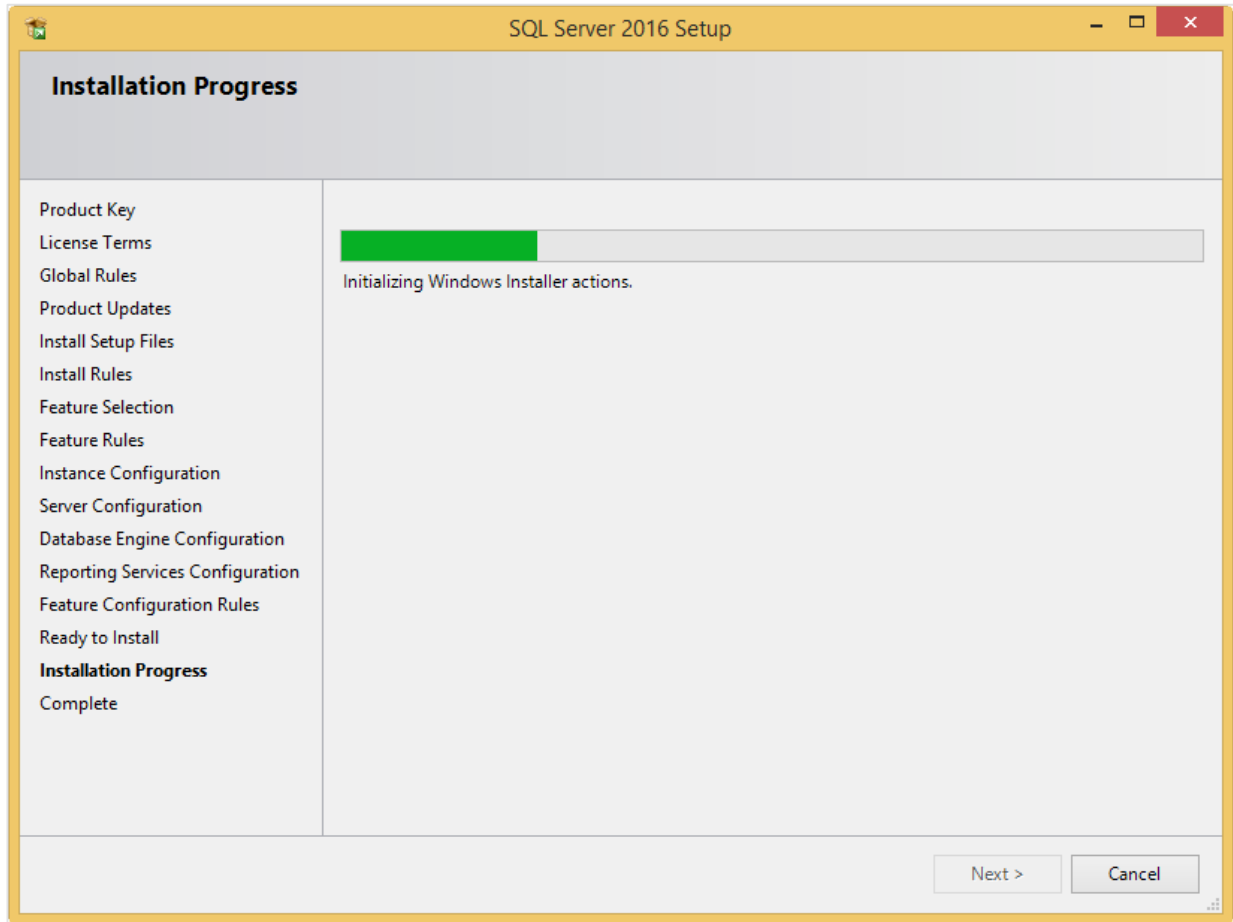
**Note:**

Depending on the situation, it may or may not be necessary to close the installation wizard and restart.

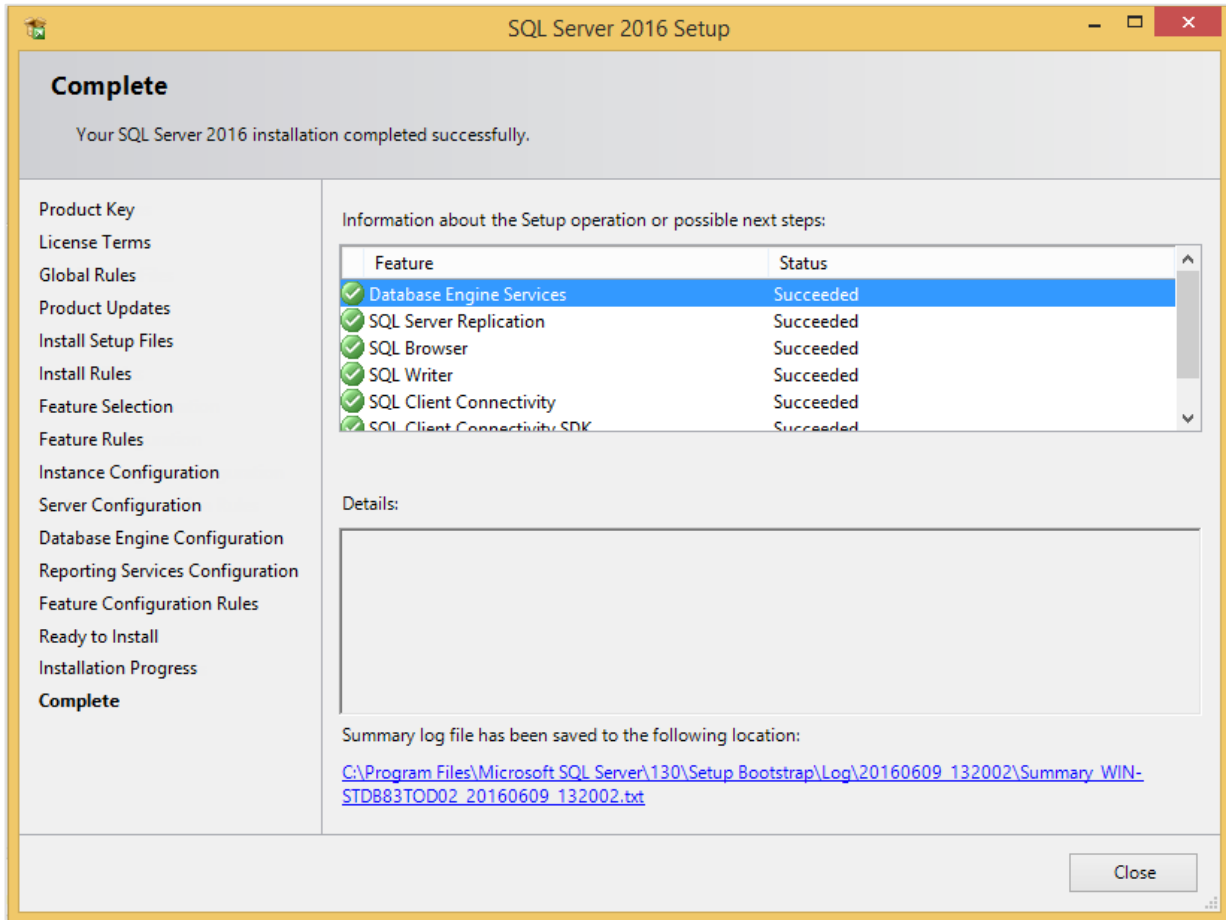
24. Click **Next** to continue. However, this button is available only when no checks have failed.



25. In the **Ready to Install** screen, a summary of the defined installation criteria will be displayed. Click **Install** to start the installation.



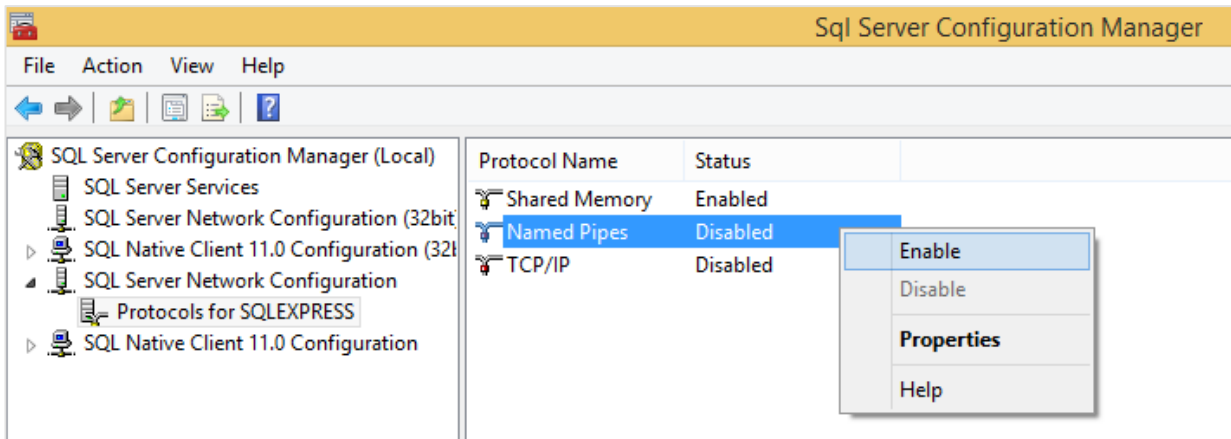
26. The screen displaying the progress of the installation will be displayed. The installation might take some time.



27. As soon as the installation has completed successfully, the installed components are displayed with a green icon. Click **Close** to close the wizard.

28. To be able to access the SQL Server via a network, you have to activate some protocols. When working with a network environment, you have to check if the protocols are activated. If required, activate the protocols.

- Start (on the server where MS SQL Server 2016 is installed) **SQL Server Configuration Manager**. In Windows, go to **Start**, select **All Programs**, followed by **Microsoft SQL Server 2016**. Click **Configuration Tools**, and then **SQL Server 2016 Configuration Manager**.
- Click **SQL Server Network Configuration**.
- Select **Protocols for xxxx**. (“xxxx” has to be replaced by the name you have defined for the SQL Server during installation).
- Right-click the protocols **Named Pipes** and **TCP/IP** and click **Enable** to enable these protocols.





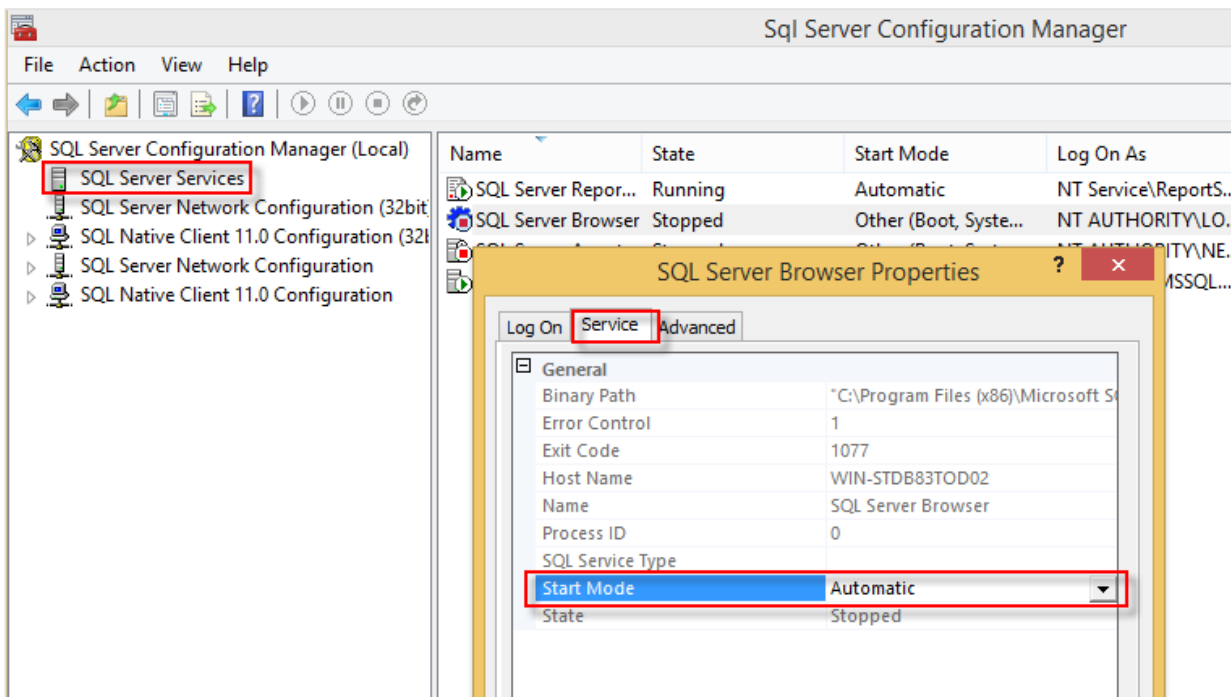
29. You might also need to start the **SQL Server Browser** service. This service is used for identifying the ports that the installation of SQL Server listens to. When this service is not started, you can use the SQL Server only locally. To check if this service is started, follow these steps:

- Start (on the server where MS SQL Server 2016 is installed) **SQL Server Configuration Manager**. In Windows, go to **Start**, select **All Programs**, followed by **SQL Server 2016**. Click **Configuration Tools**, and then **SQL 2016 Server Configuration Manager**.
- Click **SQL Server Services**.
- On the right side, the **SQL Server Browser** service is displayed.

**Note:**

When it is not started, the icon is red. When it is started, the icon is green. Ensure that the service starts automatically so that every time the system is restarted, the service will also start.

- Right-click **SQL Server Browser** and select **Properties**.
- In the **SQL Server Browser Properties** screen, click the **Service** tab.
- At **Start Mode**, select **Automatic**, as displayed in the following screen:



- Click **Apply** to apply the changes. The **SQL Server Browser** service will now start automatically every time the system is started.
- Next, start **SQL Server Browser**.
- In the **SQL Server Browser Properties** screen, click the **Log On** tab.
- Click **Start** to start the service. When the **Start** button is inactive, the **SQL Server Browser** service is already started and you do not have to start it.

**Note:**

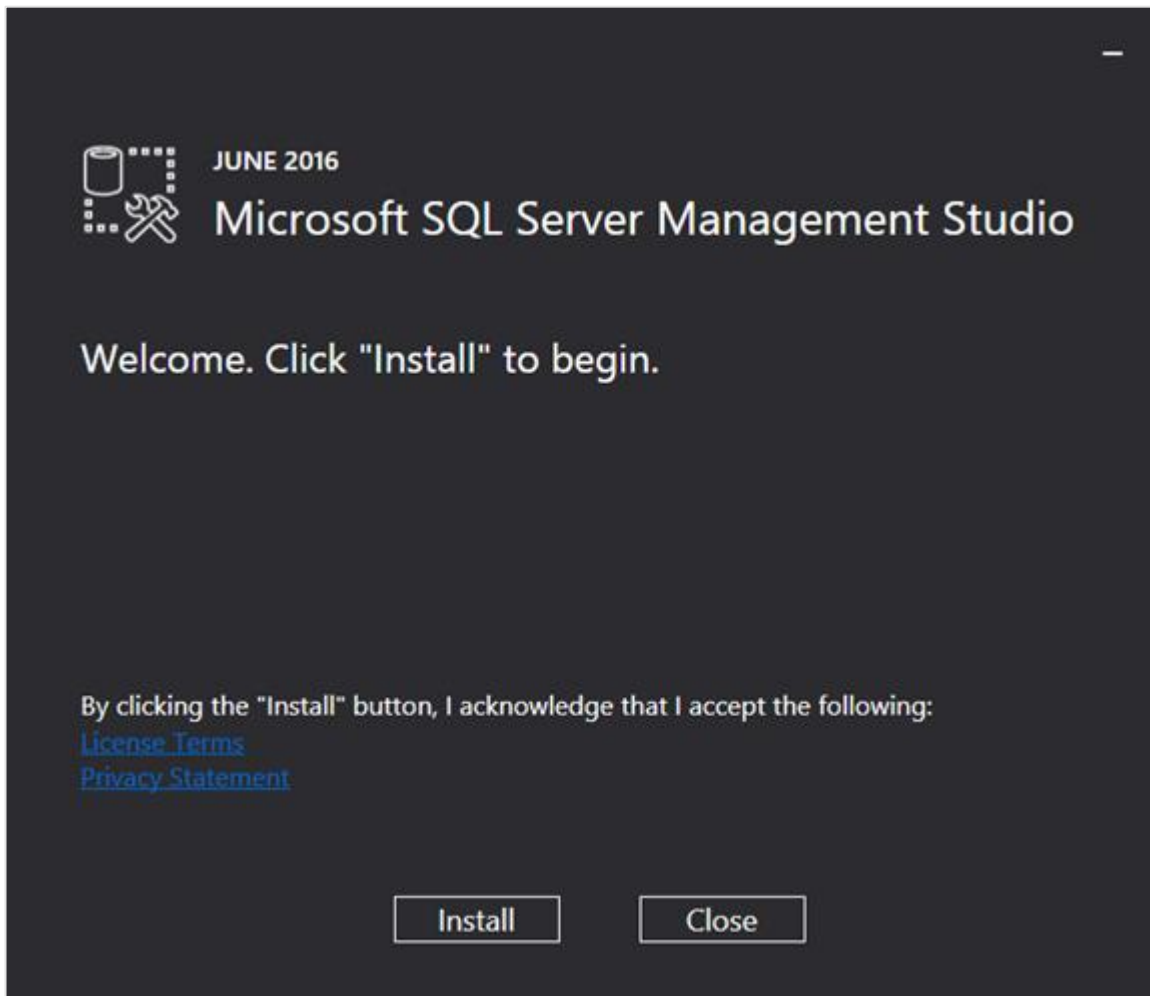
When you have a firewall, you have to configure the firewall to allow connections with SQL Server 2016. The default port for SQL Server 2014 is 1433. The SQL browser used UDP port 1434.

## Installing SQL Management Studio for SQL Server 2016

The next step is to install SQL Server Management Studio. SQL Server Management Studio is an application for managing the SQL Server. With SQL Server Management Studio, you can create and restore backups, change database settings, and give users SQL Server rights.

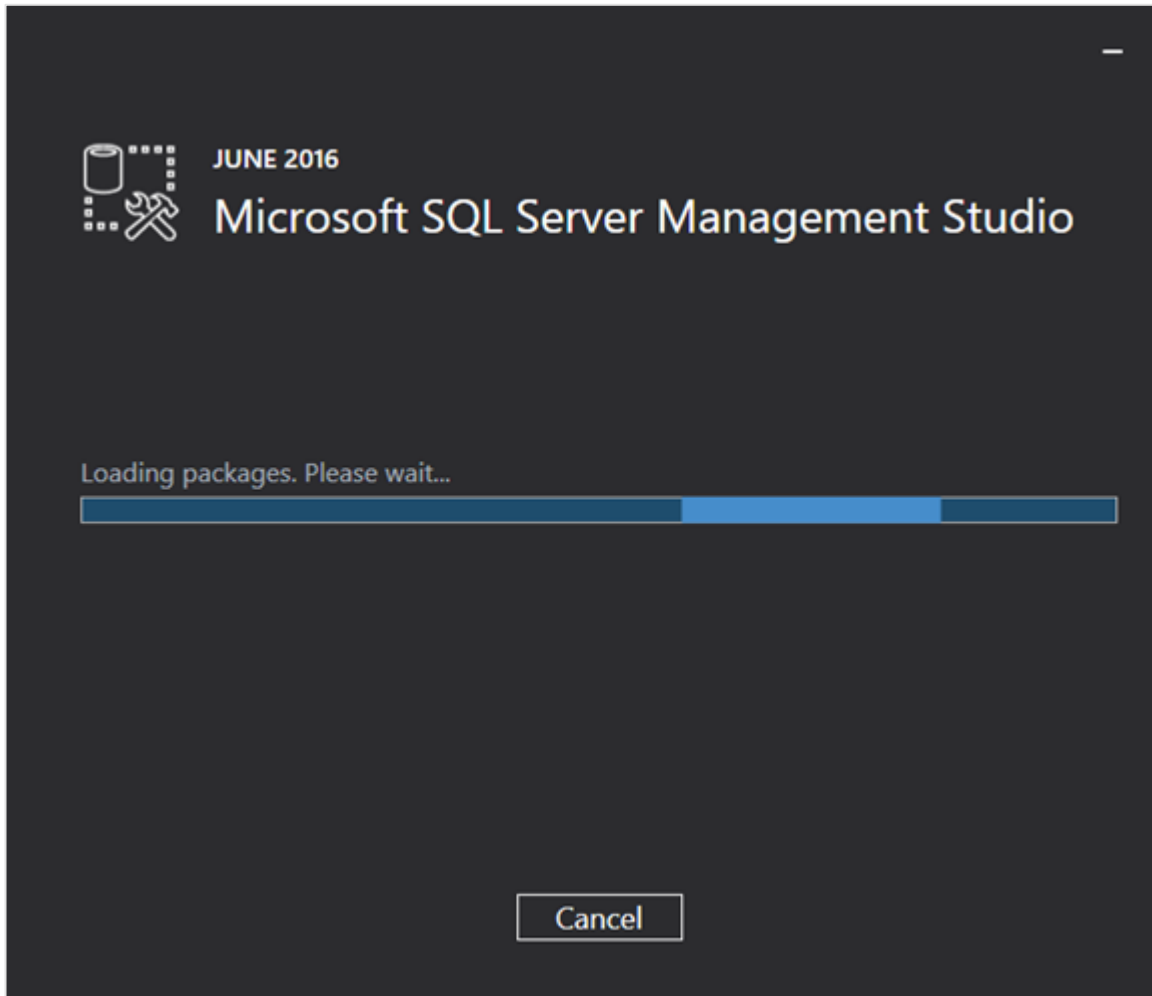
- Log in as an administrator on the system where you have installed SQL Server 2016.
- The setup file for SQL Server Management Studio can be downloaded from the Microsoft website (<https://msdn.microsoft.com/library/mt238290.aspx>). Place this file on the system where MS SQL Server 2016 is installed.
- Start the installation by double-clicking the downloaded file.

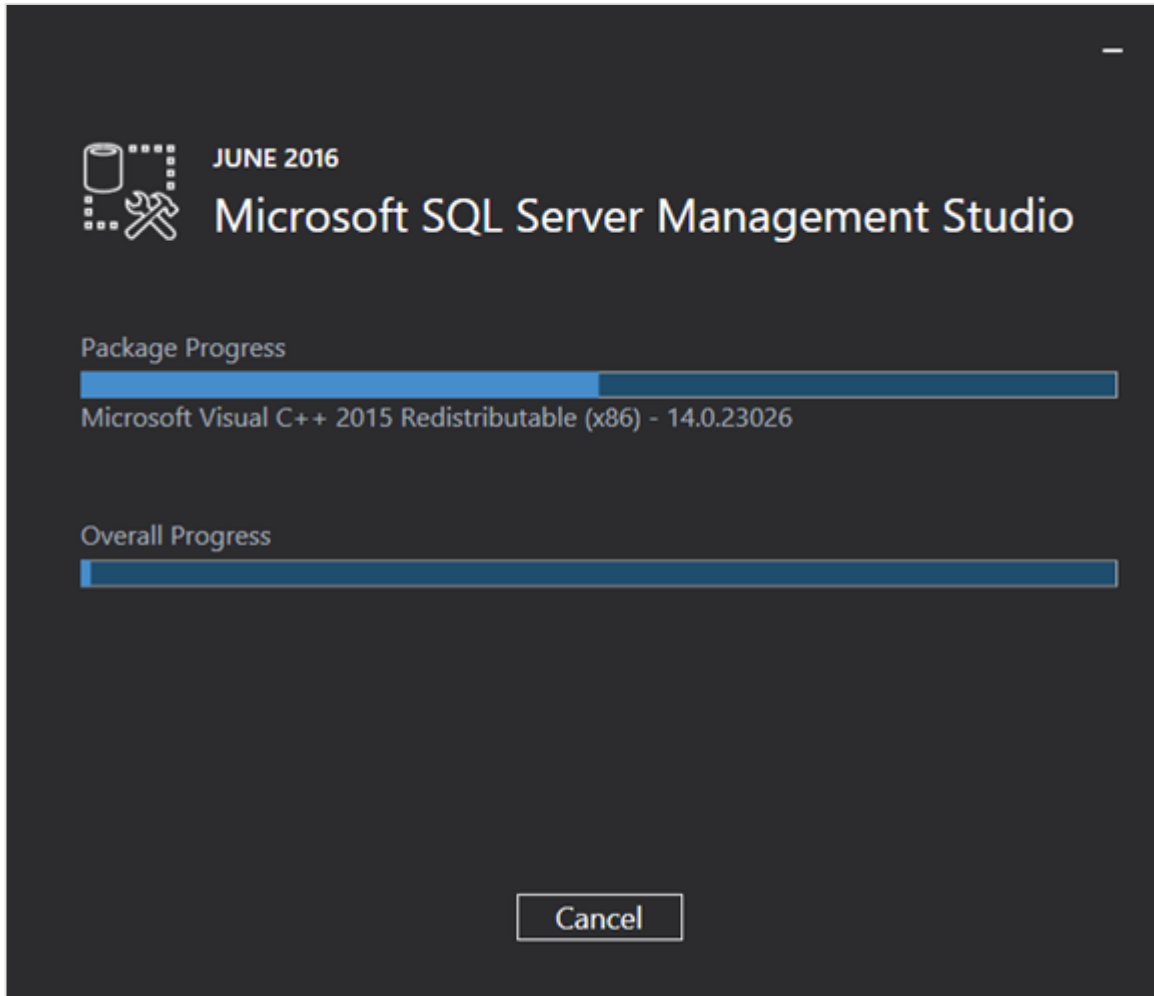
The following screen will be displayed:



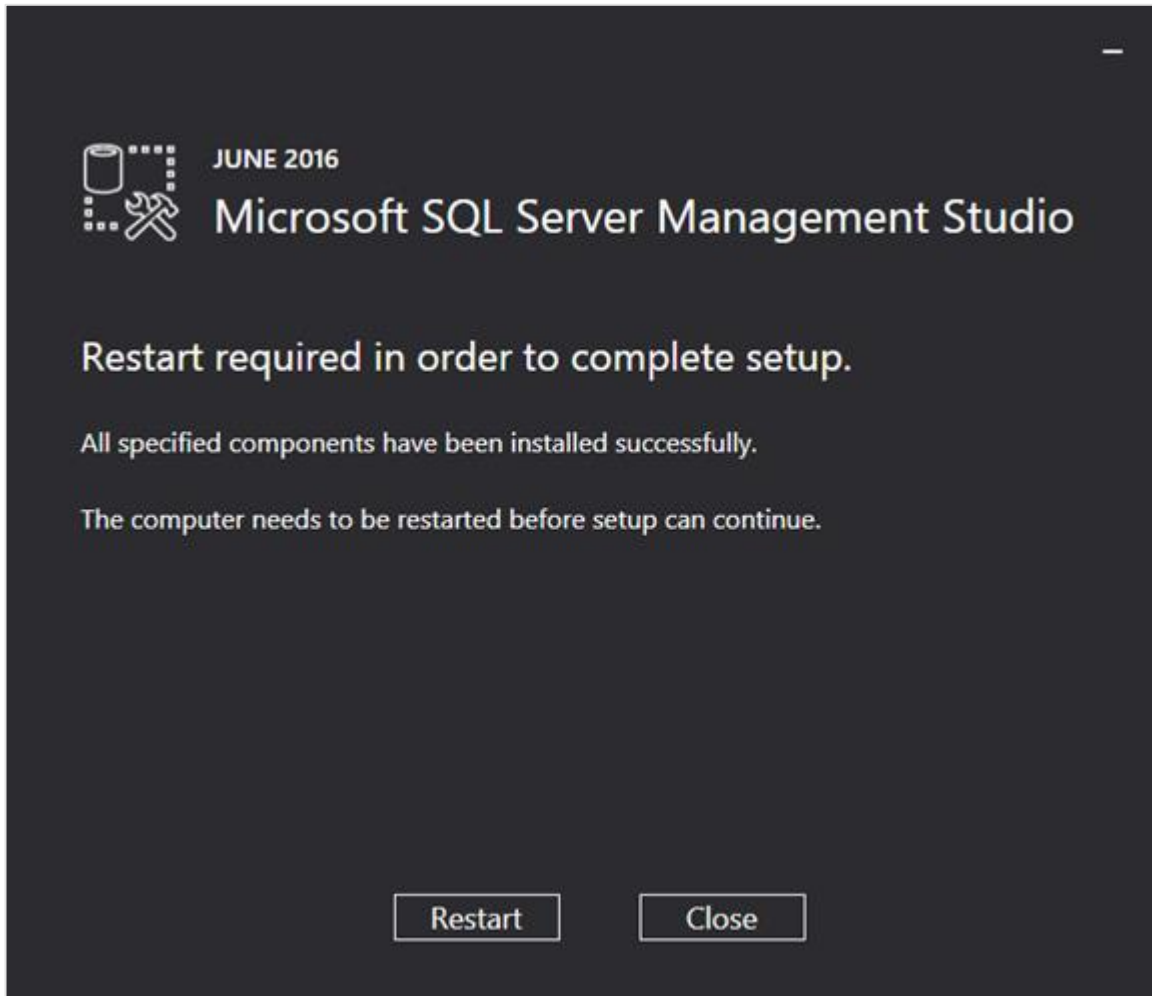
Click **Install** to start the installation.

During the installation, you can follow the progress of the installation. The following screens will be displayed. The installation can take some time.





When the installation is completed, the following screen will be displayed. You have to restart the system to complete the setup.



## 2.7.5 Installing and updating Microsoft SQL Server 2017

### Installing Microsoft SQL Server 2017

This section describes the installation of SQL Server 2017 Standard Edition. The installation procedure for the Enterprise Edition is similar, but some screens may differ.

Before installing, you should have, at the very least Exact Synergy Enterprise product update 261 to work with SQL Server 2017.

In the following steps, it is assumed that you are installing the SQL server as a new installation or as a new instance:

- For a new installation, there is no MS SQL Server software present in your system. After the installation, you will have one MS SQL Server.
- When installing a new instance, install MS SQL Server next to your current MS SQL Server version. After the installation, you will have multiple MS SQL Servers; the one you have just installed, and the existing one(s) present in your system.

The steps for installing a new instance are almost the same as the steps for installing the SQL server in a system where no other versions of SQL server are present. Where applicable, the difference(s) will be highlighted in this section.

The next step is installing SQL Server 2017. In a standalone environment, you have to perform the following steps on the workstation where you work with Exact Synergy Enterprise. In all other cases, you have to perform the following steps on the server.

When working in a standalone environment, you will have one computer on which you are working with Exact Synergy Enterprise. On this computer, both Exact Synergy Enterprise and the SQL server are installed. This is seen as a standalone even when your computer is part of a network, as all software needed to work with Exact Synergy Enterprise are installed on this computer.

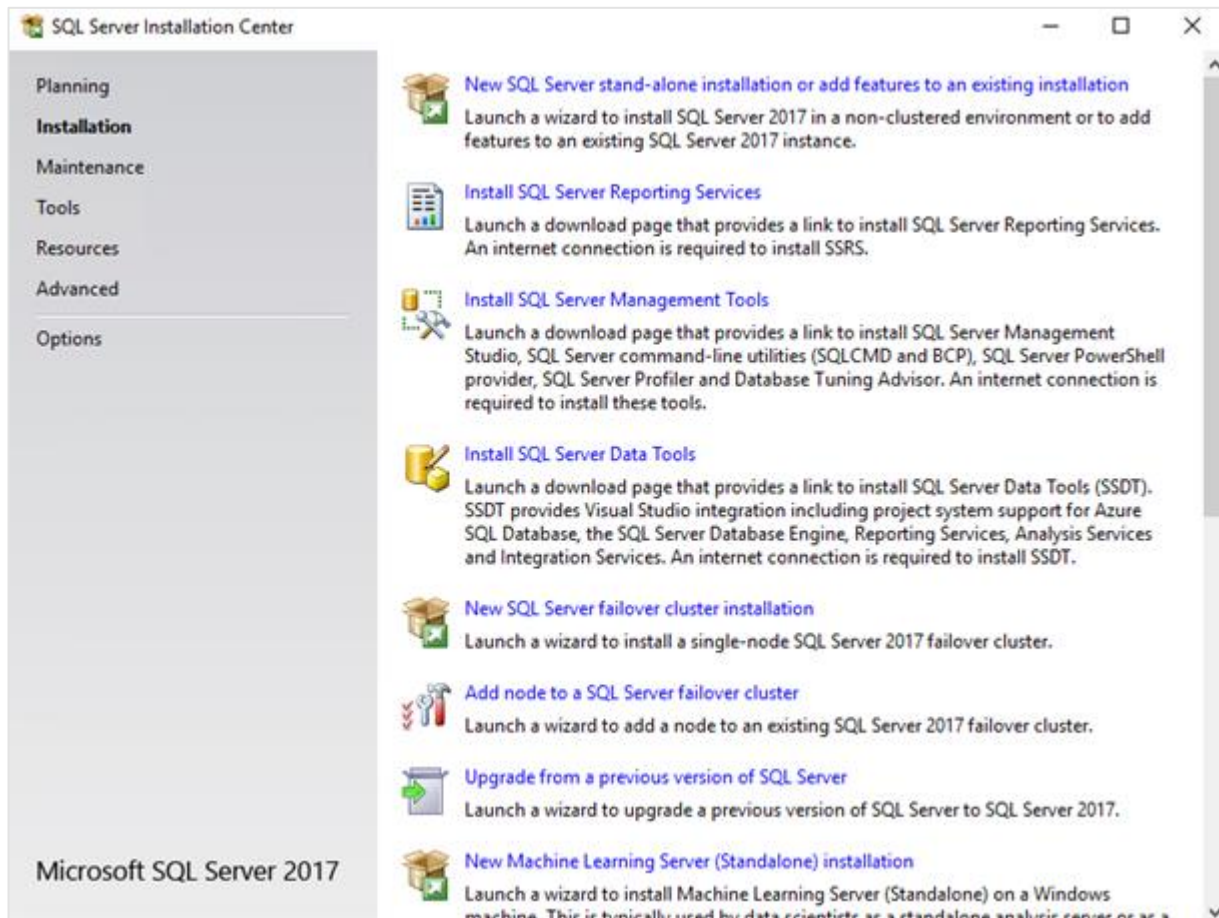
Before installing the SQL server, check the system requirements for the specific SQL server edition at [https://msdn.microsoft.com/en-us/library/ms143506\(v=sql.140\).aspx](https://msdn.microsoft.com/en-us/library/ms143506(v=sql.140).aspx).

When these requirements are met, you can start installing SQL Server 2017.

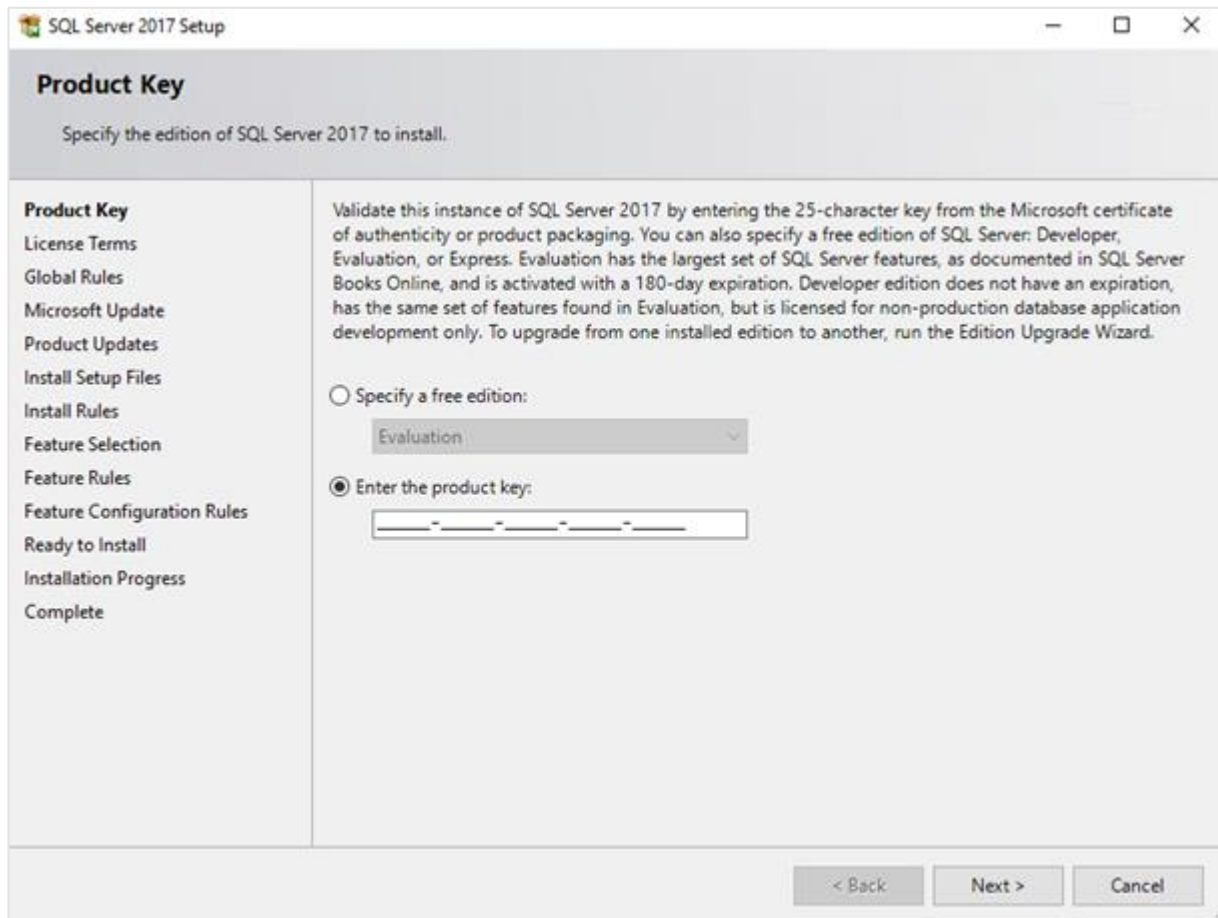
#### To install Microsoft SQL Server 2017:

1. Log in as an administrator on the server (of a workstation for the standalone installation).
2. Insert the SQL server installation DVD into your DVD drive. When the autorun is not performed, open the DVD drive in Windows Explorer and start the installation by clicking **Setup.exe**.

- The **SQL Server Installation Center** screen will be displayed. In this screen, you can view and execute several installation tasks.

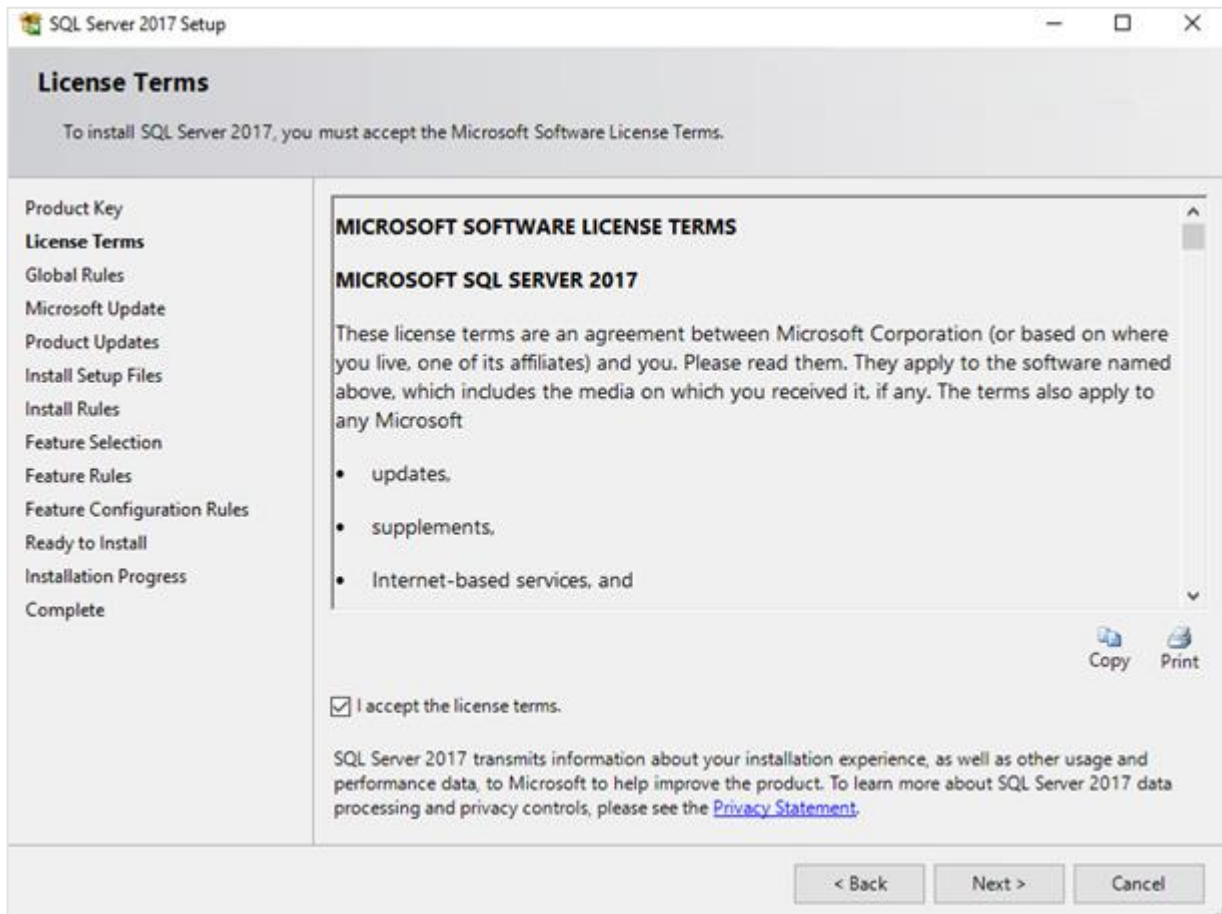


4. Click **Installation** on the left panel. Next, click **New SQL Server Stand-alone installation or add features to an existing installation**.

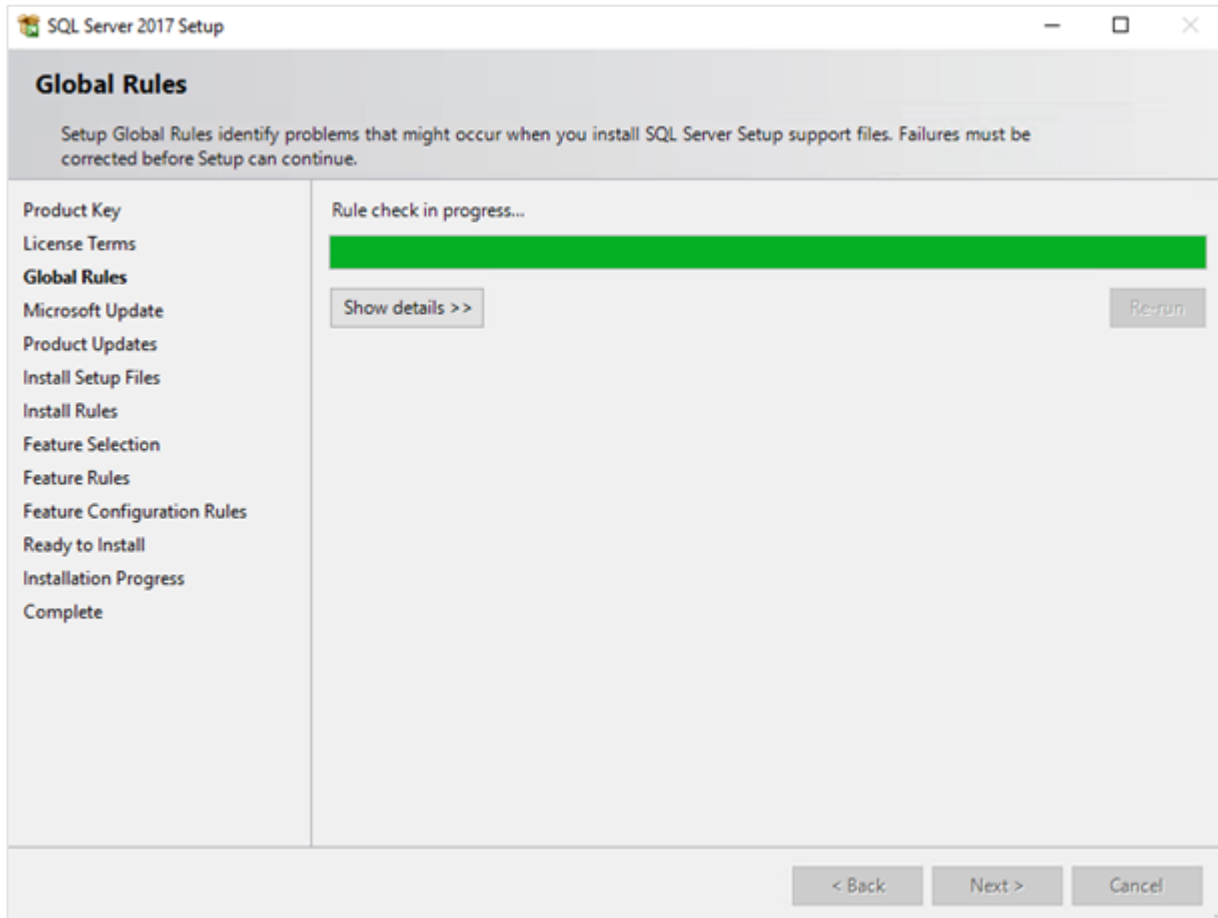




5. In the **Product Key** screen, type the product key at **Enter the product key** if the product key is not filled automatically. Click **Next** to continue. The screen with the license terms will be displayed.



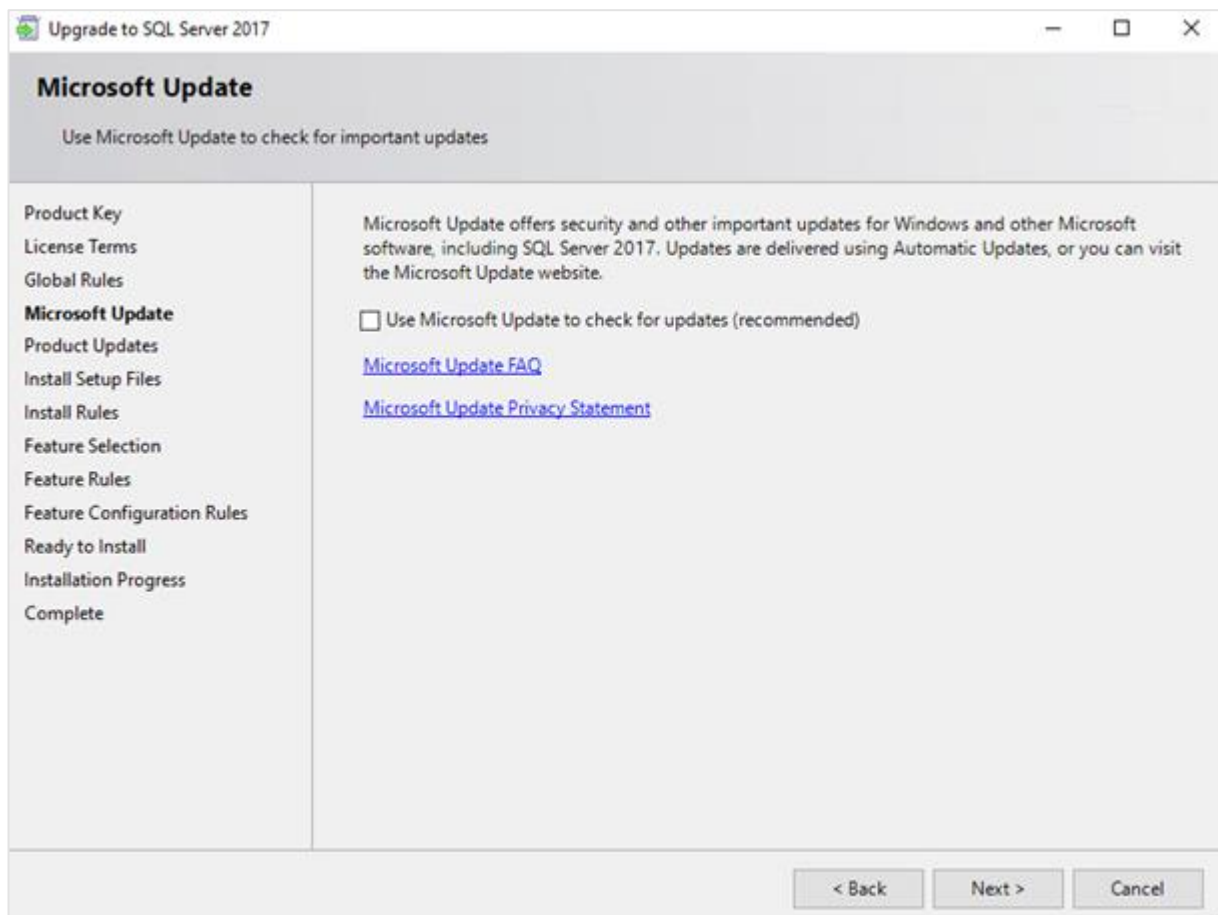
6. To continue, select **I accept the license terms** and click **Next**.



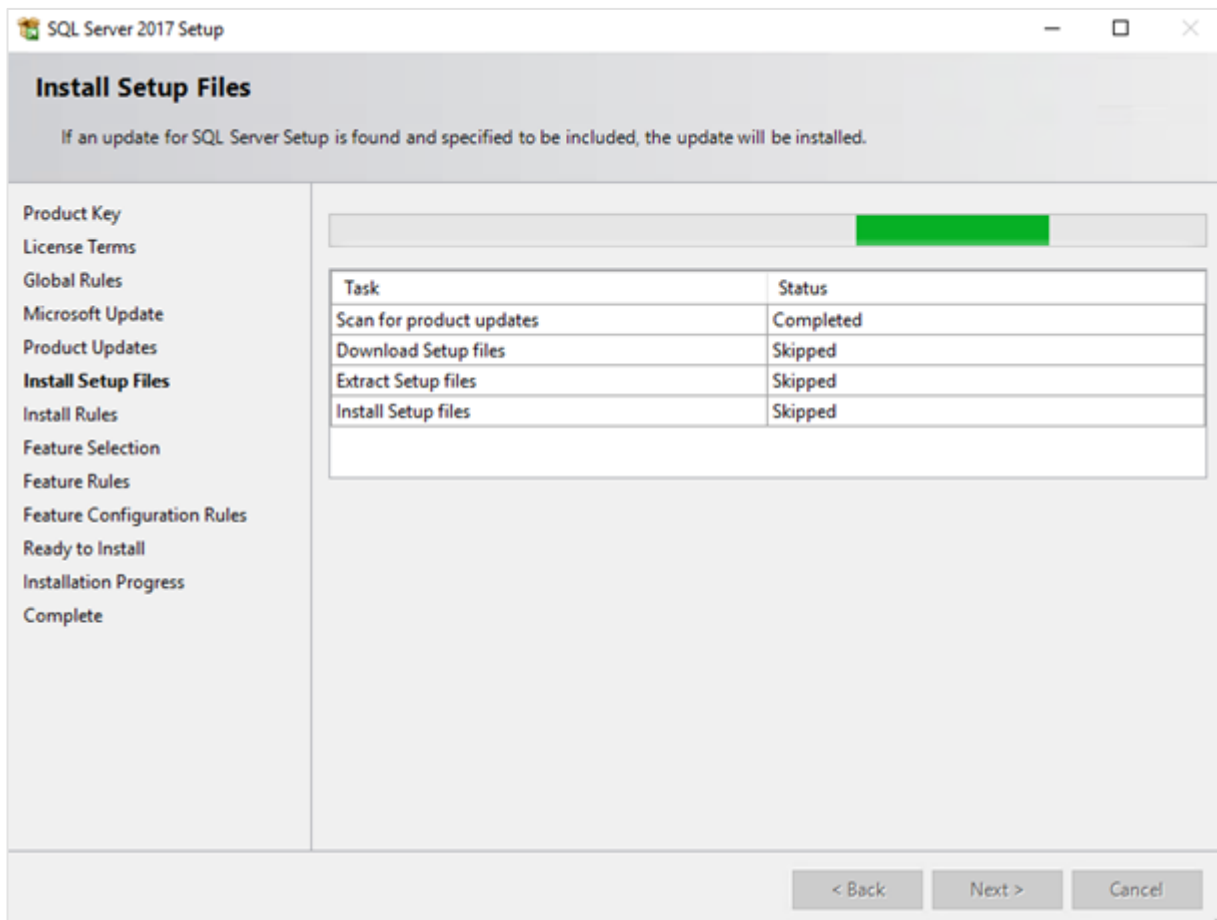
- Checks will be performed to identify possible problems when installing the SQL Server Setup support files. The SQL Server Setup support files are needed for the installation of MS SQL Server 2017, and are automatically installed via this installation wizard. Click **Show details >>** to view the details of these checks. If all the checks have passed, the results will be displayed in this screen. However, if a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and error(s). After solving the issue, click **Re-run** to perform the checks again.

**Note:**

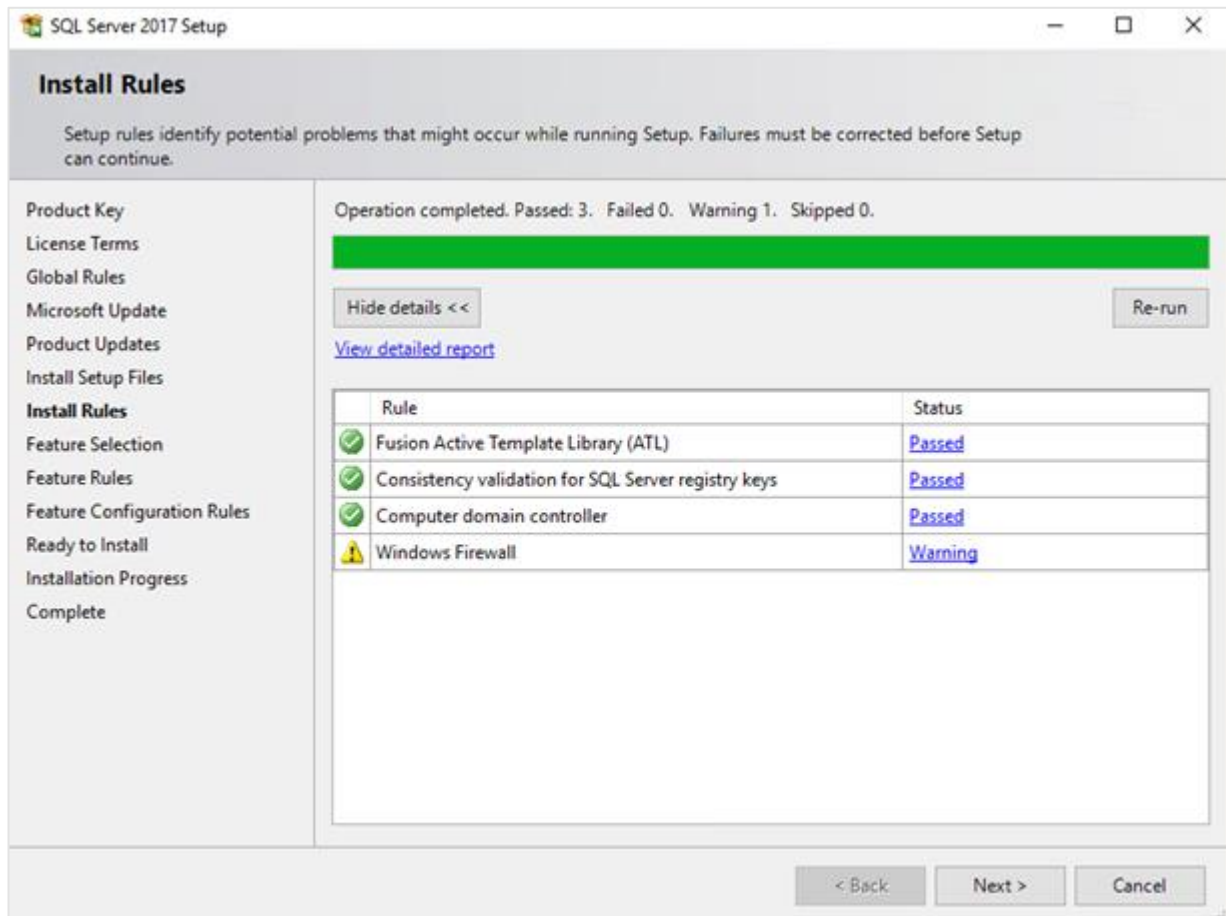
It is possible that some warnings are displayed regarding the firewall. In spite of the warnings, it is still possible to continue with the installation. Depending on the situation, it is not necessary to close the installation wizard and restart. If all checks have passed, this screen will close automatically, and the next screen will be displayed.



8. The **Microsoft Update** screen allows you to check for new update files online. If you select this option and click **Next**, the **Product Updates** screen will be displayed whereby you can download the files. However, if you did not select this option, the **Install Setup Files** screen will be displayed.



9. The installation wizard will check for the updates, and install the available update files. Once completed, the screen will close automatically, and the next screen will be displayed:

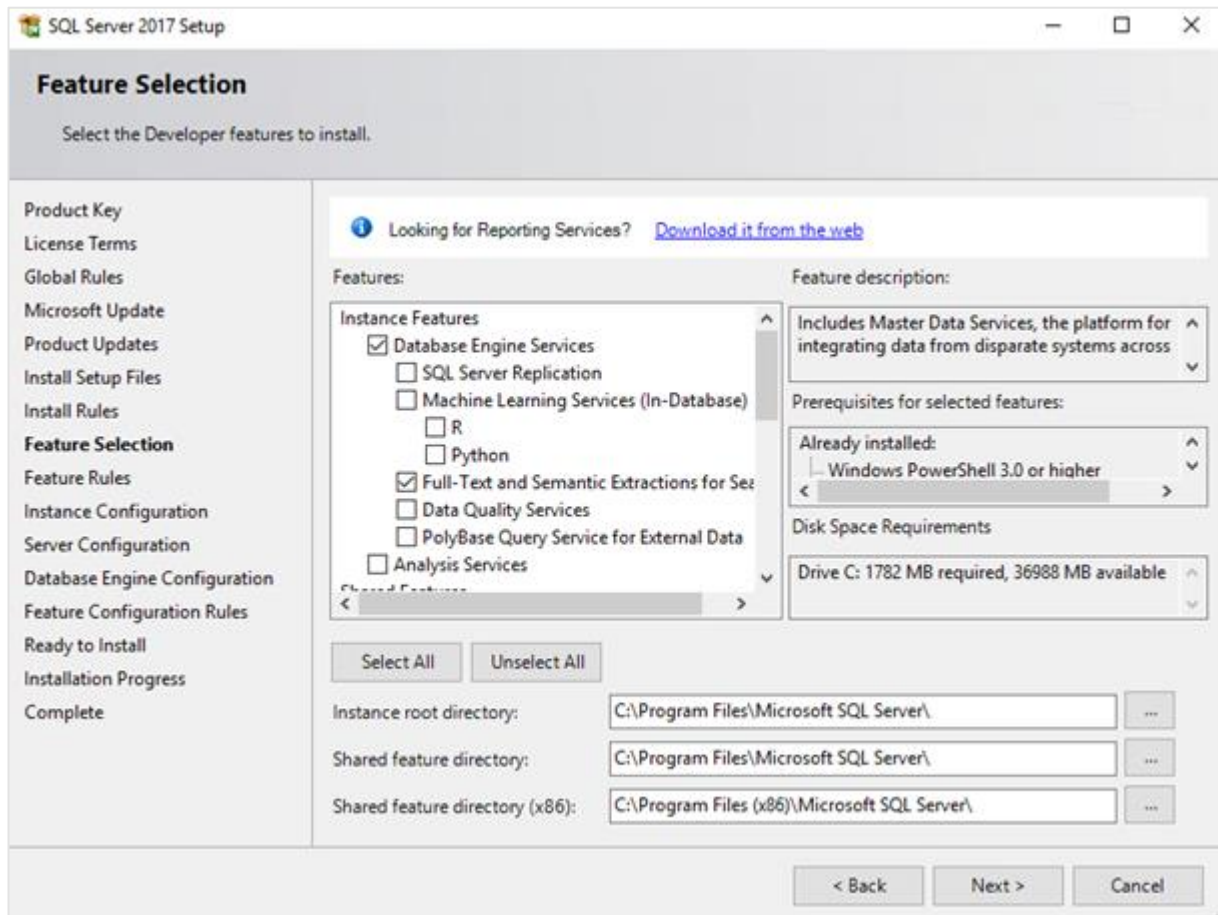


10. Checks will be performed to identify the potential problems that might occur during the installation. Click **Show details >>** to view the details of the checks. If a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and error(s). Once the issue is solved, click **Re-run** to perform the checks again.

**Note:**

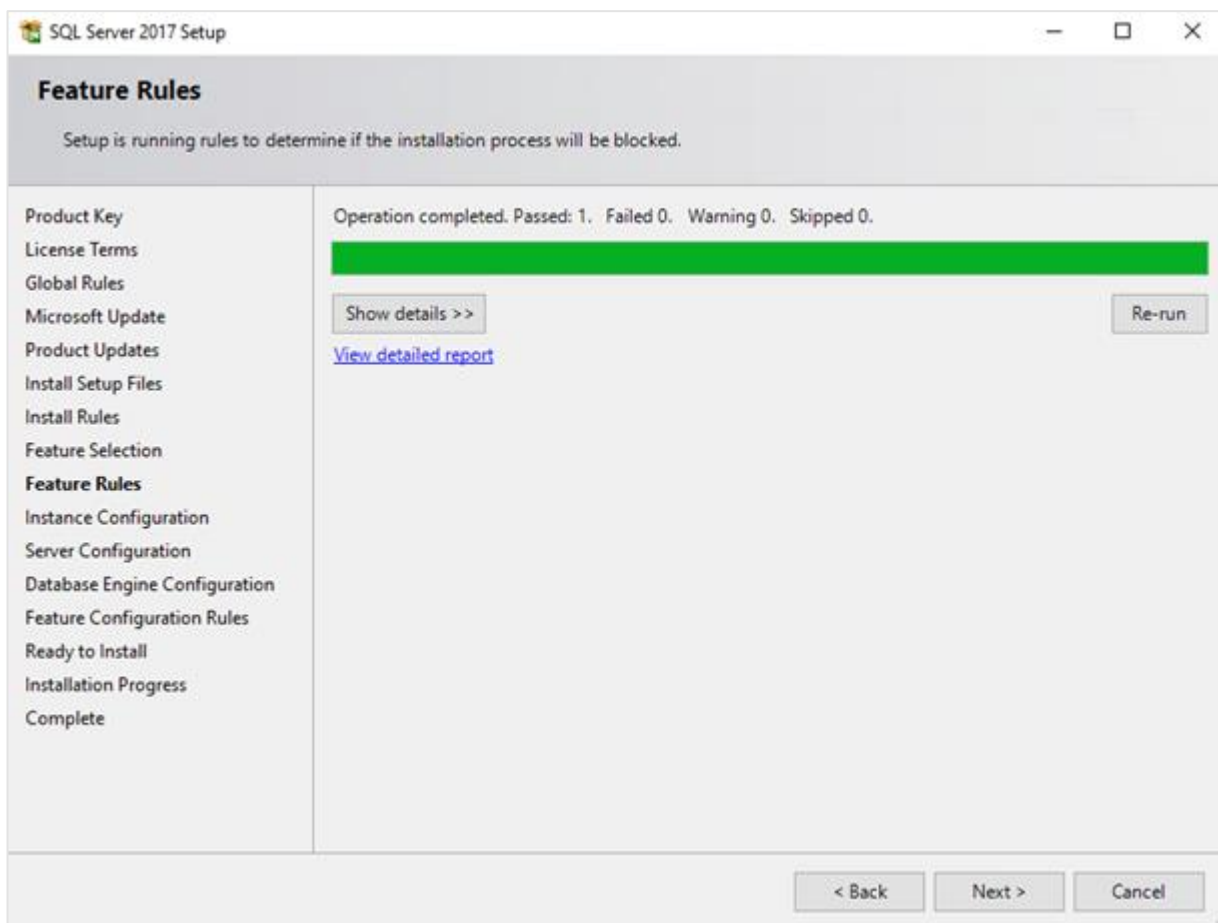
Depending on the situation, it is not necessary to close the installation wizard and restart.

11. Click **Next** to continue. The **Next** button is enabled only if no checks have failed.



12. Select the features that you want to install. When you select a feature, the corresponding information about the feature will be displayed on the right. Select the following features:
- Database Engine Services
  - Client Tools Connectivity
  - Integration Services
  - Full-Text and semantic extractions for Search: If you want to use the SQL full text search to search for feeds in the timeline of Exact Synergy Enterprise, this component should be selected. If you have not selected this component during the installation of the SQL server, you can install it at a later time.

Besides selecting the features, you do not have to change anything else. Click **Next** to continue.



13. Checks will be performed to identify the issues that might block the installation. Click **Show details >>** to view the details of the checks. If a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and error(s). After solving the issue, click **Re-run** to perform the check again.

**Note:**

Depending on the situation, it is not necessary to close the installation wizard and restart.

14. Click **Next** to continue. However, the **Next** button is enabled only if no checks have failed.

The screenshot shows the 'Instance Configuration' dialog box in the SQL Server 2017 Setup wizard. The window title is 'SQL Server 2017 Setup'. The main heading is 'Instance Configuration' with a subtitle: 'Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installation path.'

On the left side, there is a navigation pane with the following items: Product Key, License Terms, Global Rules, Microsoft Update, Product Updates, Install Setup Files, Install Rules, Feature Selection, Feature Rules, **Instance Configuration** (highlighted), Server Configuration, Database Engine Configuration, Feature Configuration Rules, Ready to Install, Installation Progress, and Complete.

The main area contains the following configuration options:

- Default instance
- Named instance:
- Instance ID:
- SQL Server directory: C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER
- Installed instances:

Instance Name	Instance ID	Features	Edition	Version
---------------	-------------	----------	---------	---------

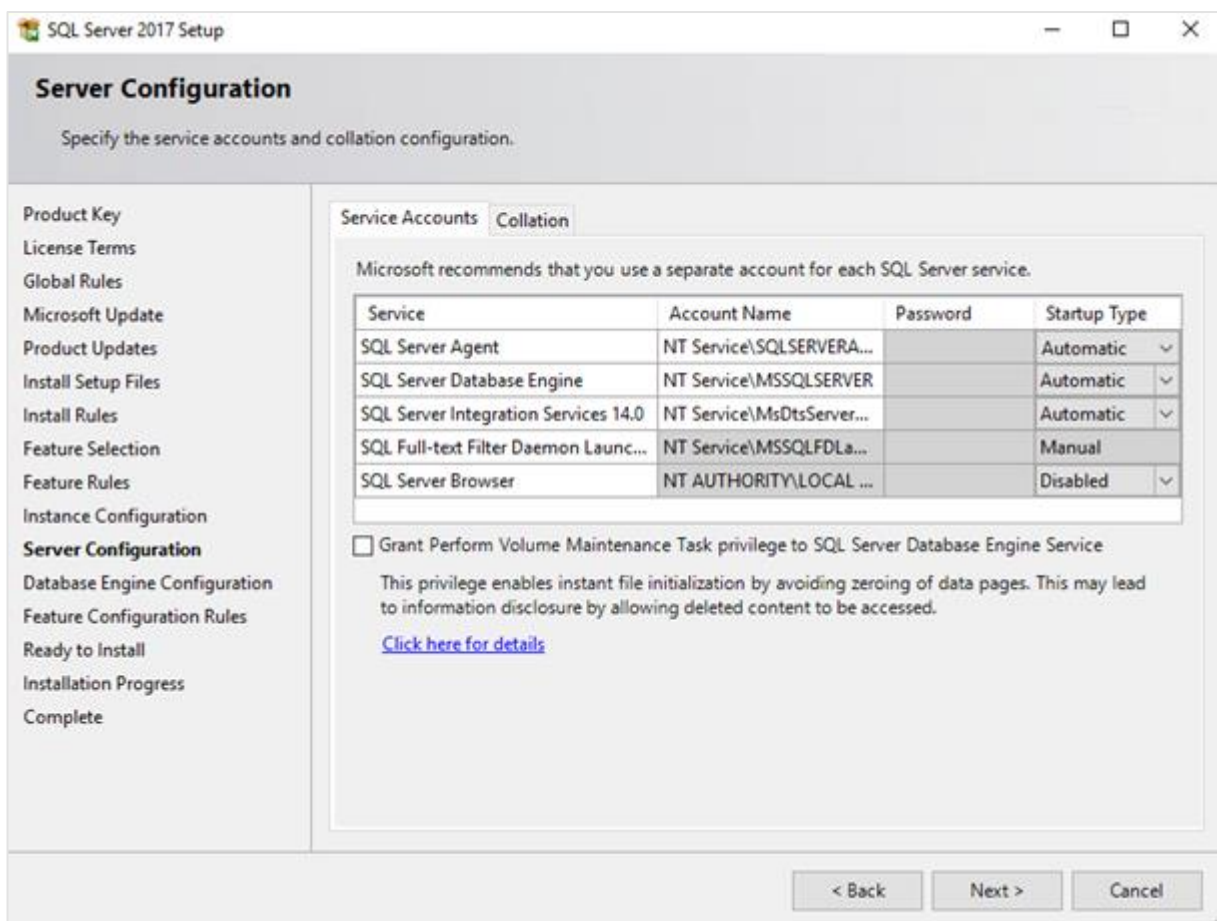
At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.



15. When the actions in the previous screen are completed, the screen will close automatically, and the next screen will be displayed. In the **Instance Configuration** screen, define a name for the instance. This is the name for your SQL server. Click **Next** to continue.

**Note:**

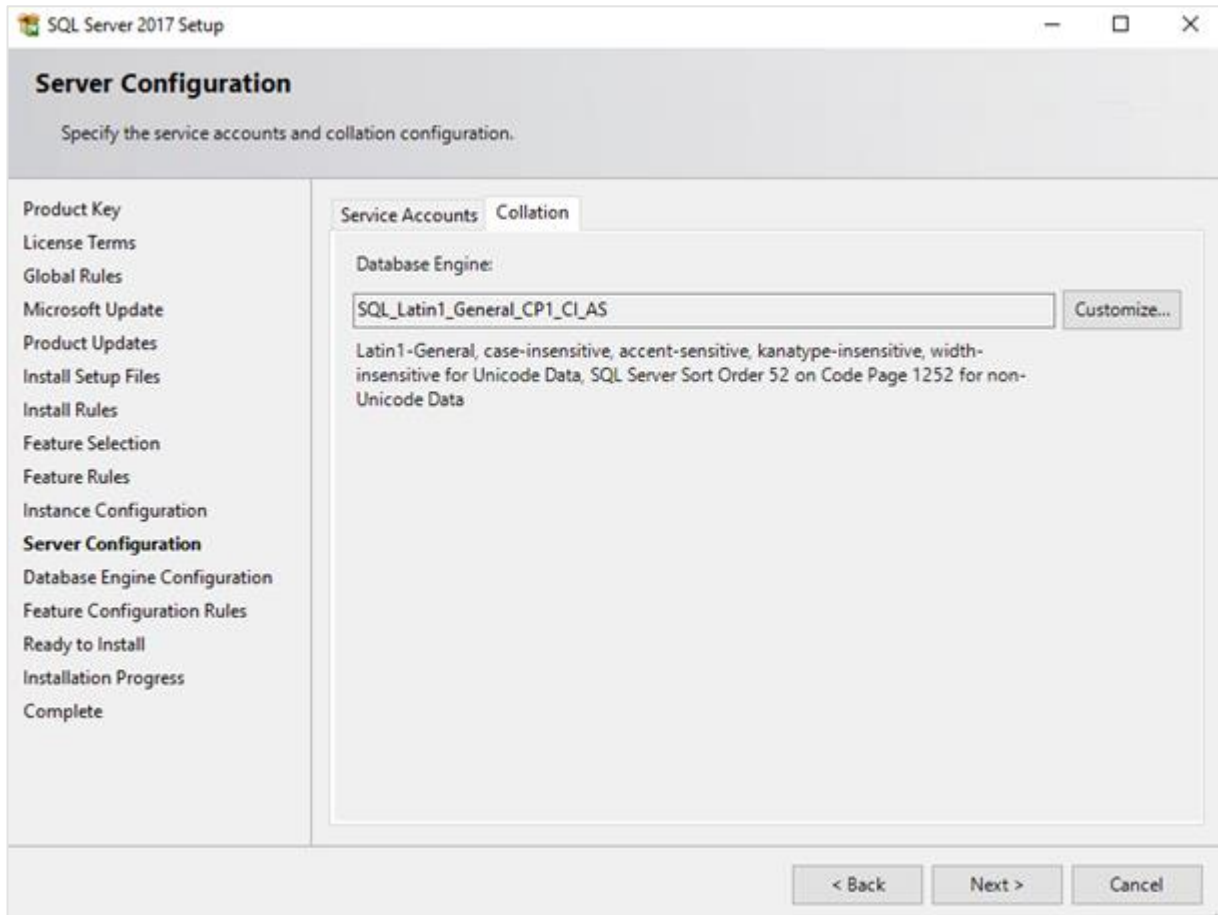
- **New installation** — When it is a new installation, there is no SQL Server present in your system. In this case, select Default instance. You do not have to change anything else in the screen. At the bottom of the screen, you can see if there are other SQL server instances present. If this is a new installation in the system whereby there is no SQL Server, this section will be blank.
- **Installing a new instance** — When there are existing SQL server installations present, you have to select Named instance, and define a name for the instance, for example “SQL2017”. The name must be unique, and cannot be the same as the name of the other instances that are already present in your system. The Instance ID field will be filled automatically, and you do not have to change this manually. At the bottom of the screen, you can see if any other instances are present.



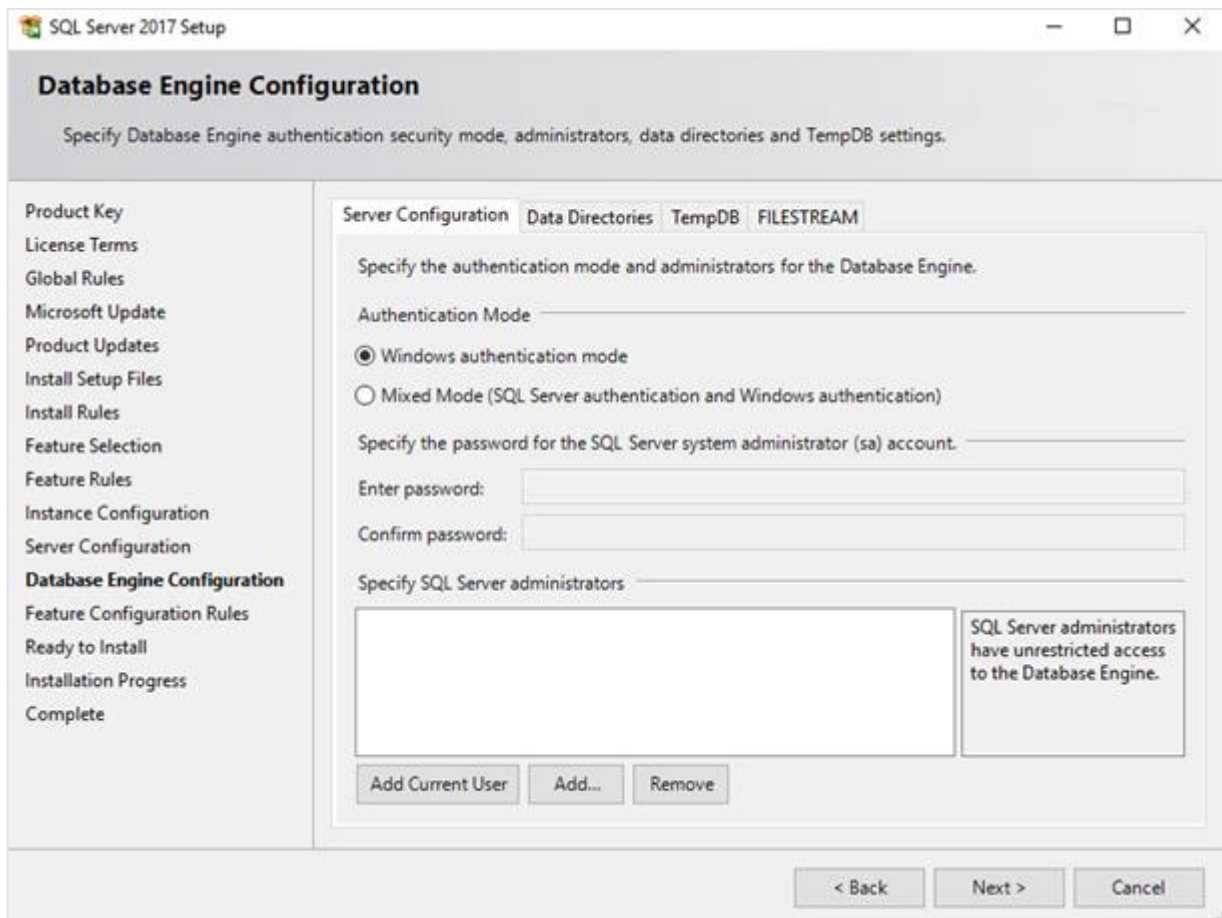
16. In the **Server Configuration** screen, under the **Service Accounts** tab, you can define which account you want to use to start the MS SQL Server 2017 services. For standard installation, accept the data as displayed in the screen. However, when you select a user for which the password regularly changes, you will also have to change the password in the services each time the password changes. If you forget to change the password in the services, the services cannot be started, and you will not be able to use the SQL Server until you have updated the password in the services, and have started the services. Depending on the account selected at **Account Name**, you have to define the password at **Password**.

17. In the **Startup Type** column, you can define to start the service automatically when the system starts. The **SQL Server Database Engine** is the SQL Server. This service should always be started to be able to use the SQL Server.

The **SQL Server Browser** service is a service that is used to identify the ports that the installation of the SQL Server listens to. This service must be started to enable the network access. The **Startup Type** option for this service should be **Automatic**. The account name of this service cannot be changed.



18. Under the **Collation** tab, you can define the collation (character set) settings. For Western European countries, you can accept the collation as displayed in the screen. Click **Next** to continue. The following screen will be displayed:



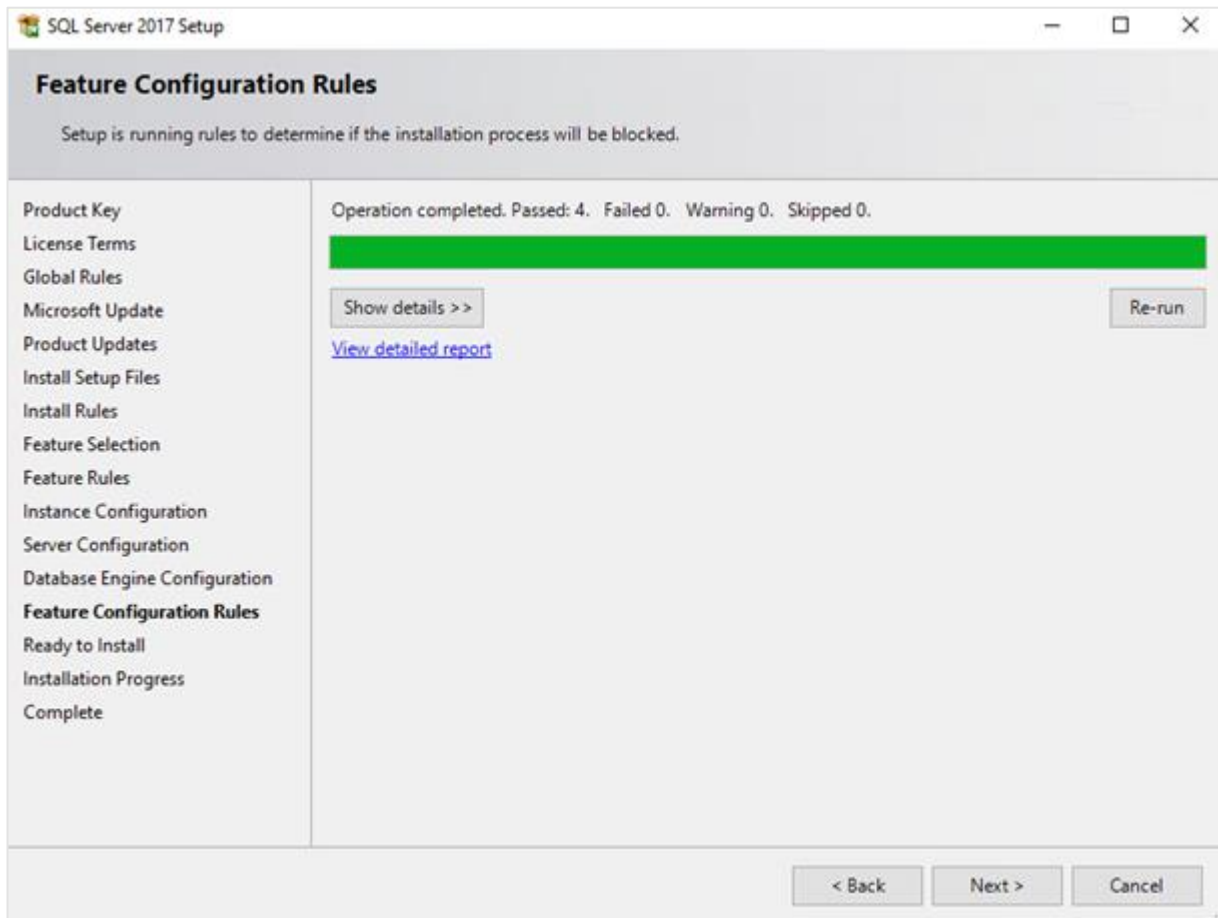
19. Under the **Server Configuration** tab, define how you want to log in to the SQL server. If you are working with Exact Synergy Enterprise and/or Exact Globe Next with extended functionality, select **Mixed Mode (SQL Server authentication and Windows authentication)**. Type your password at **Enter password** and **Confirm password**. This password will be the password that will be used for the SA user; this default user is the System Administrator within the SQL server. If you select **Windows authentication mode**, you do not have to type the password.

**Note:**

Regardless of which Exact product you are using, you will always have to define one or more users at the bottom of the screen. These users will be the administrators for the SQL server. You have to select at least one user. This user will be the administrator for the SQL server, and can also add other users later on.

20. Click **Add Current User** to add the users that are currently performing the installation as an administrator. Click **Add** to add other users, or **Remove** to remove the selected users.

21. Click **Next** to continue.

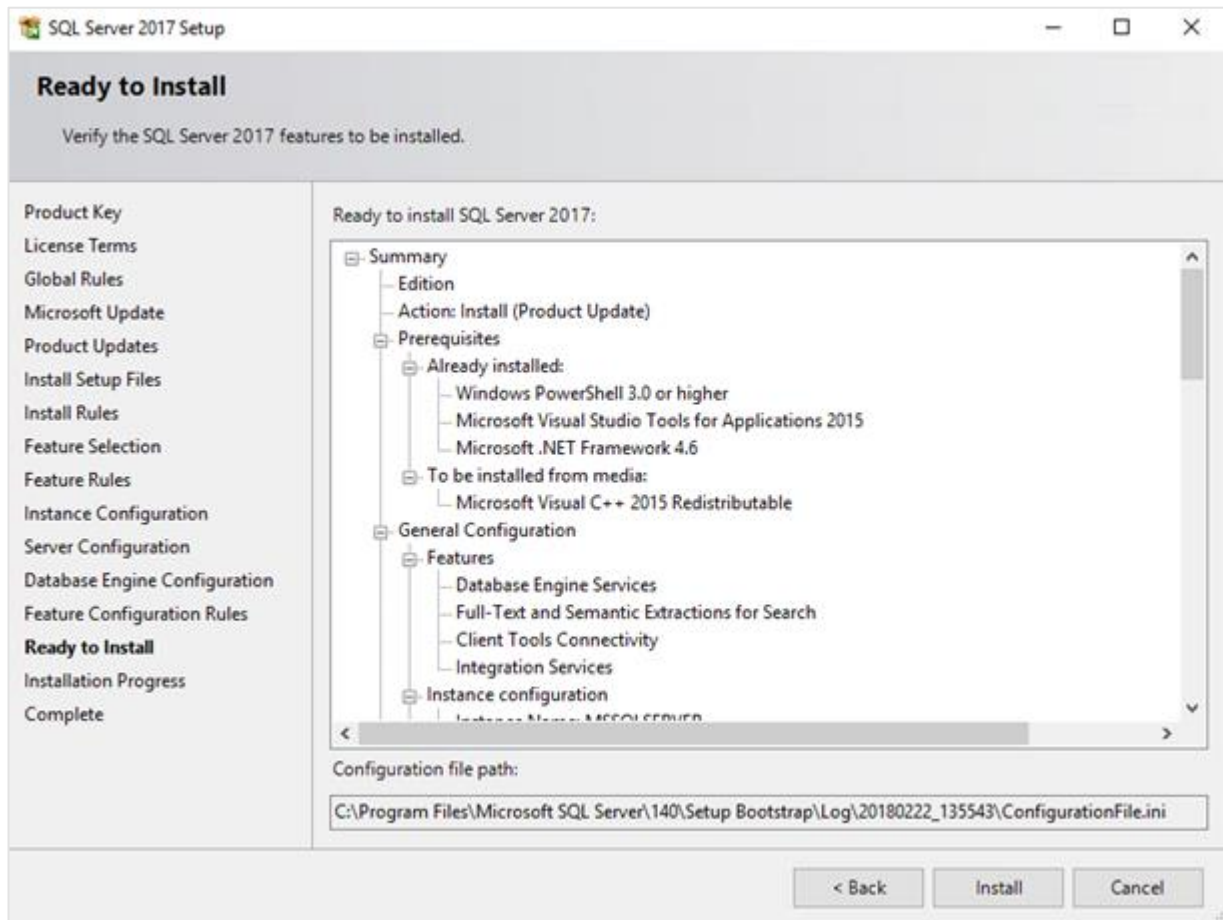


22. In the **Feature Configuration Rules** screen, checks will be performed for the problems that might occur during the installation. Click **Show details >>** to view the details of these checks. If a check has failed, a red icon will be displayed. You can click the link in the **Status** column for more information about the check and the error(s). After solving the issue, click **Re-run** to perform the checks again.

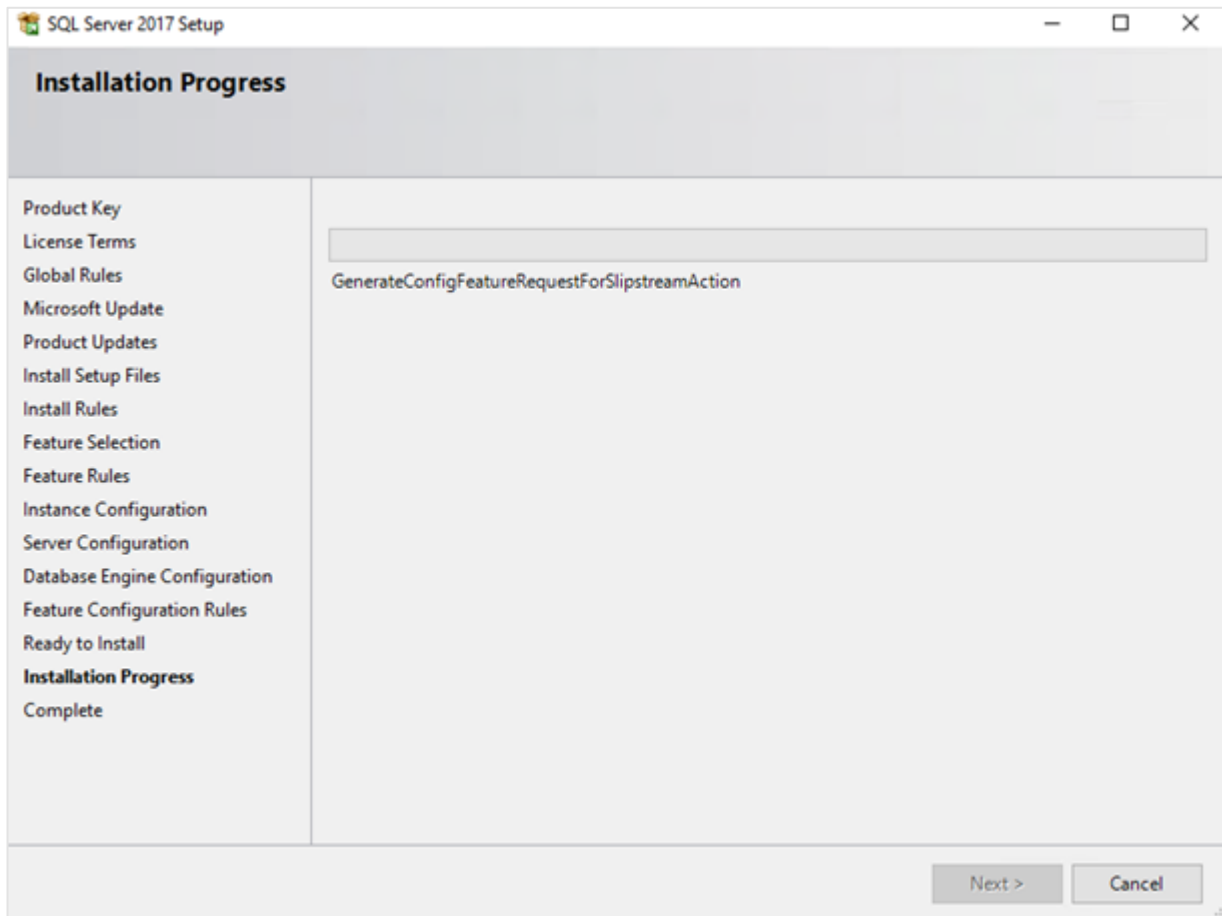
**Note:**

Depending on the situation, it is not necessary to close the installation wizard and restart.

23. Click **Next** to continue. However, this button is enabled only if no checks have failed.



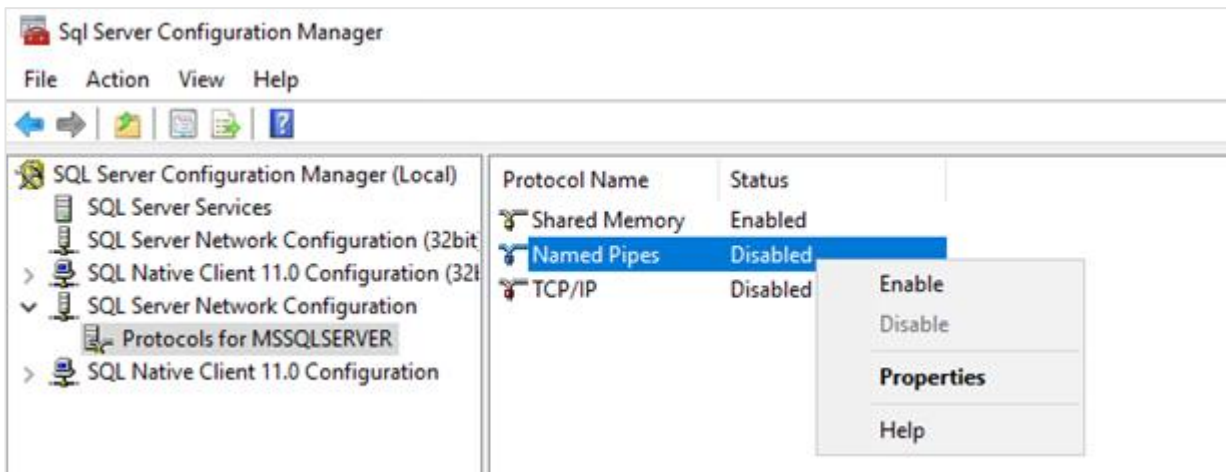
24. In the **Ready to Install** screen, a summary of the defined installation criteria will be displayed. Click **Install** to start the installation.



25. The screen displaying the progress of the installation will be displayed. The installation might take some time.
26. As soon as the installation has completed successfully, the installed components will be displayed with a green icon. Click **Close** to close the wizard.

27. To be able to access the SQL server via a network, you have to activate some protocols. When working with a network environment, you have to check if the protocols are activated. If required, activate the protocols.

- Start (on the server where MS SQL Server 2017 is installed) **SQL Server Configuration Manager**. In Windows, go to **Start**, select **All Programs**, followed by **Microsoft SQL Server 2017**. Click **Configuration Tools**, and then **SQL Server 2017 Configuration Manager**.
- Click **SQL Server Network Configuration**.
- Select **Protocols for xxxx**. (“xxxx” has to be replaced by the name you have defined for the SQL Server during the installation).
- Right-click the **Named Pipes** and **TCP/IP** protocols, and click **Enable** to enable these protocols.



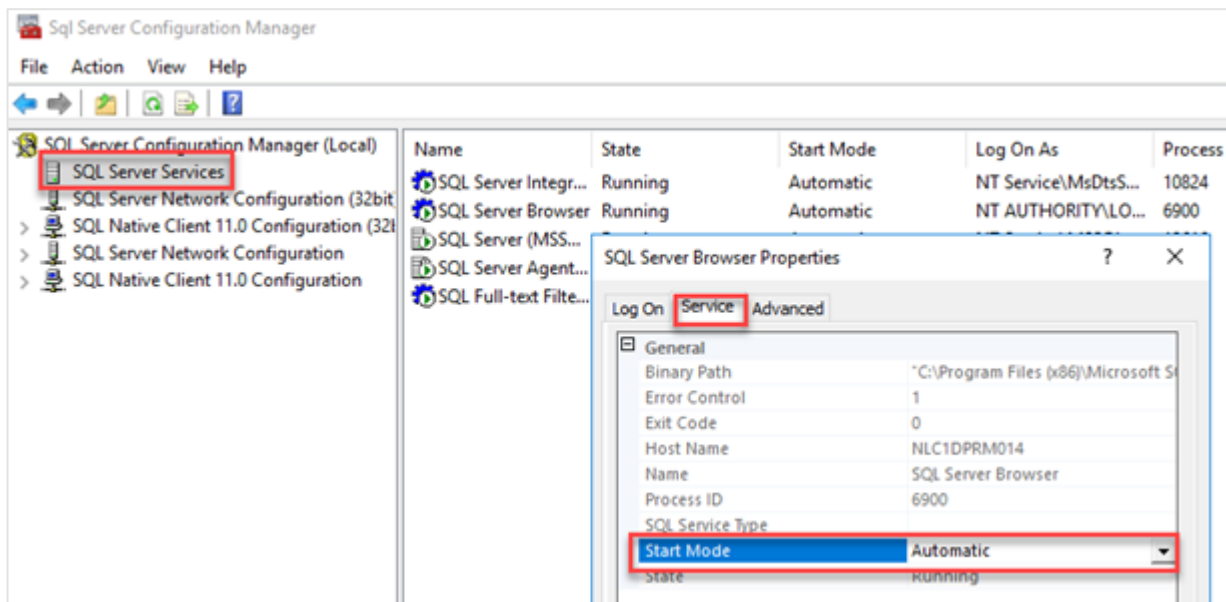
28. You might also need to start the **SQL Server Browser** service. This service is used to identify the ports that the installation of SQL server listens to. If this service is not started, you can use the SQL server only locally. To check if this service is started, do the following:

- Start (on the server where MS SQL Server 2017 is installed) **SQL Server Configuration Manager**. In Windows, go to **Start**, select **All Programs**, followed by **SQL Server 2017**. Click **Configuration Tools**, and then **SQL 2017 Server Configuration Manager**.
- Click **SQL Server Services**.
- On the right side, the **SQL Server Browser** service is displayed.

**Note:**

If it is not started, the icon is red. However, if it is started, the icon is green. Ensure that the service starts automatically so that every time the system is restarted, the service will also start.

- Right-click **SQL Server Browser**, and select **Properties**.
- In the **SQL Server Browser Properties** screen, click the **Service** tab.
- At **Start Mode**, select **Automatic**, as displayed in the following screen:



- Click **Apply** to apply the changes. The **SQL Server Browser** service will now start automatically every time the system is started.
- Next, start **SQL Server Browser**.
- In the **SQL Server Browser Properties** screen, click the **Log On** tab.
- Click **Start** to start the service. When the **Start** button is inactive, the **SQL Server Browser** service is already started, and you do not have to start it.

**Note:**

If you have a firewall, you have to configure the firewall to allow the firewall to connect with SQL Server 2017. The default port for SQL Server 2017 is 1433. The SQL browser uses UDP port 1434.



## Updating Microsoft SQL Server 2017

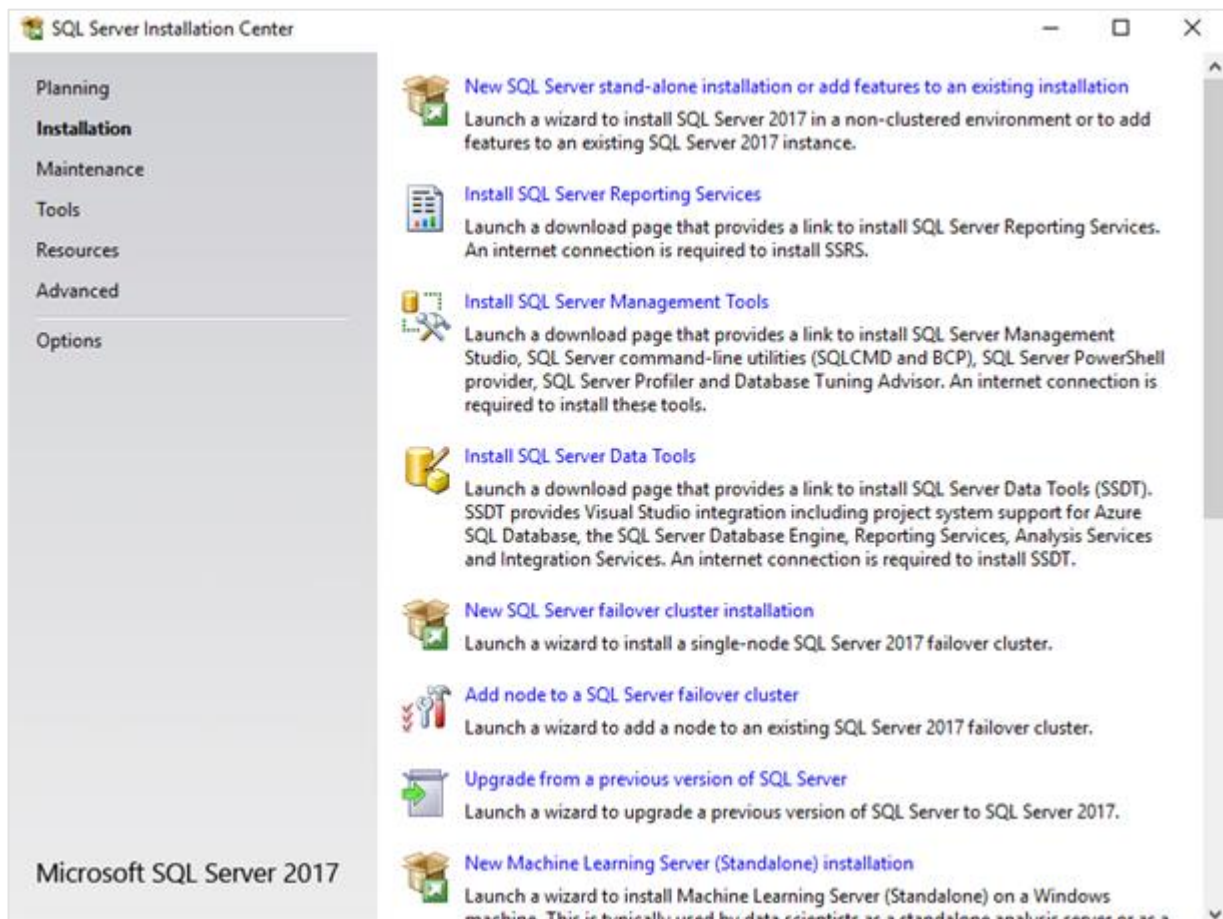
Before updating SQL Server 2017, ensure the existing SQL server supports updates. For a list of supported upgrade scenarios, see <https://msdn.microsoft.com/en-us/sql/database-engine/install-windows/supported-version-and-edition-upgrades-2017>.

**Note:**

Back up all your databases.

### To upgrade Microsoft SQL Server 2017:

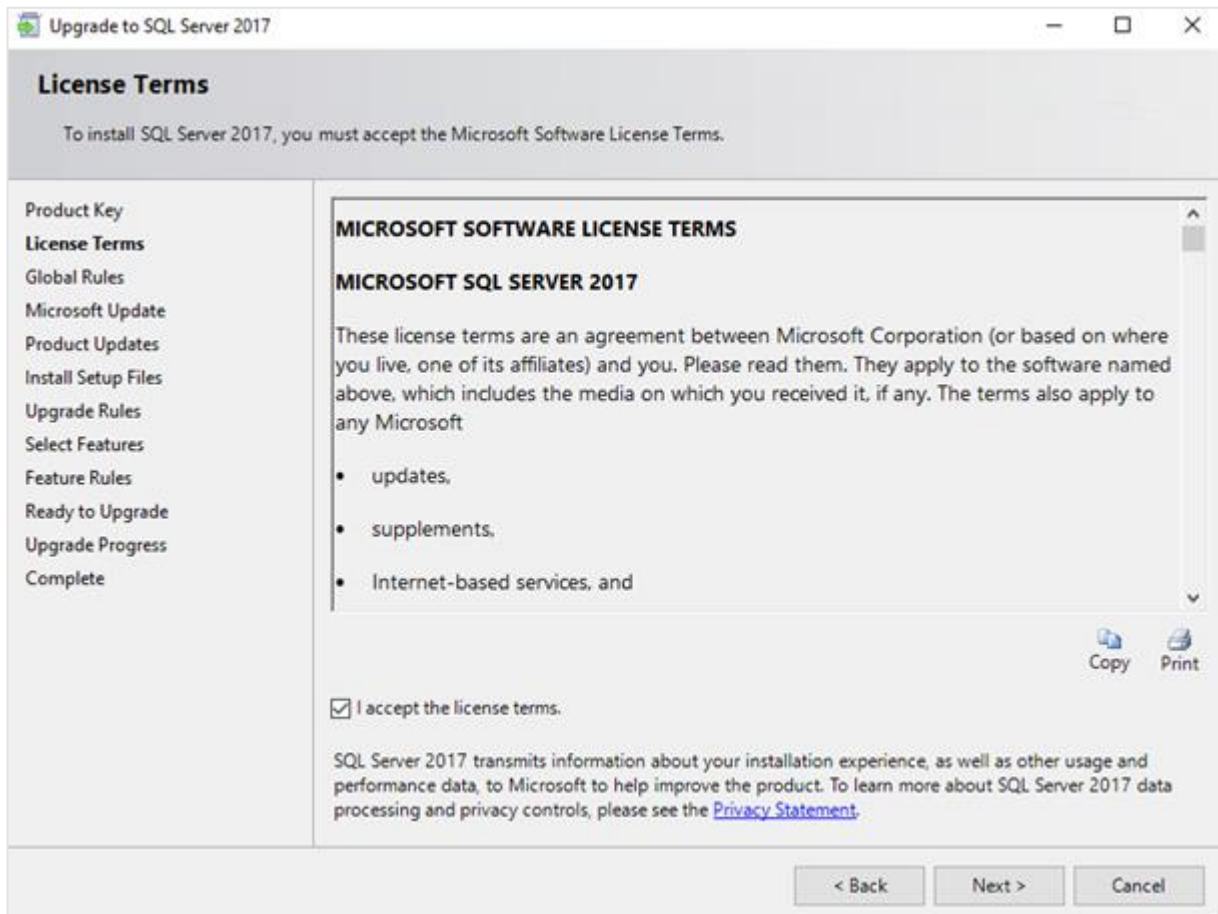
1. Log in as an administrator on the server (of the workstation for a standalone installation).
2. Insert the SQL server installation DVD into the DVD drive. If the autorun does not execute, open the DVD drive in Windows Explorer and start the installation by clicking **Setup.ext**. The following screen will be displayed:



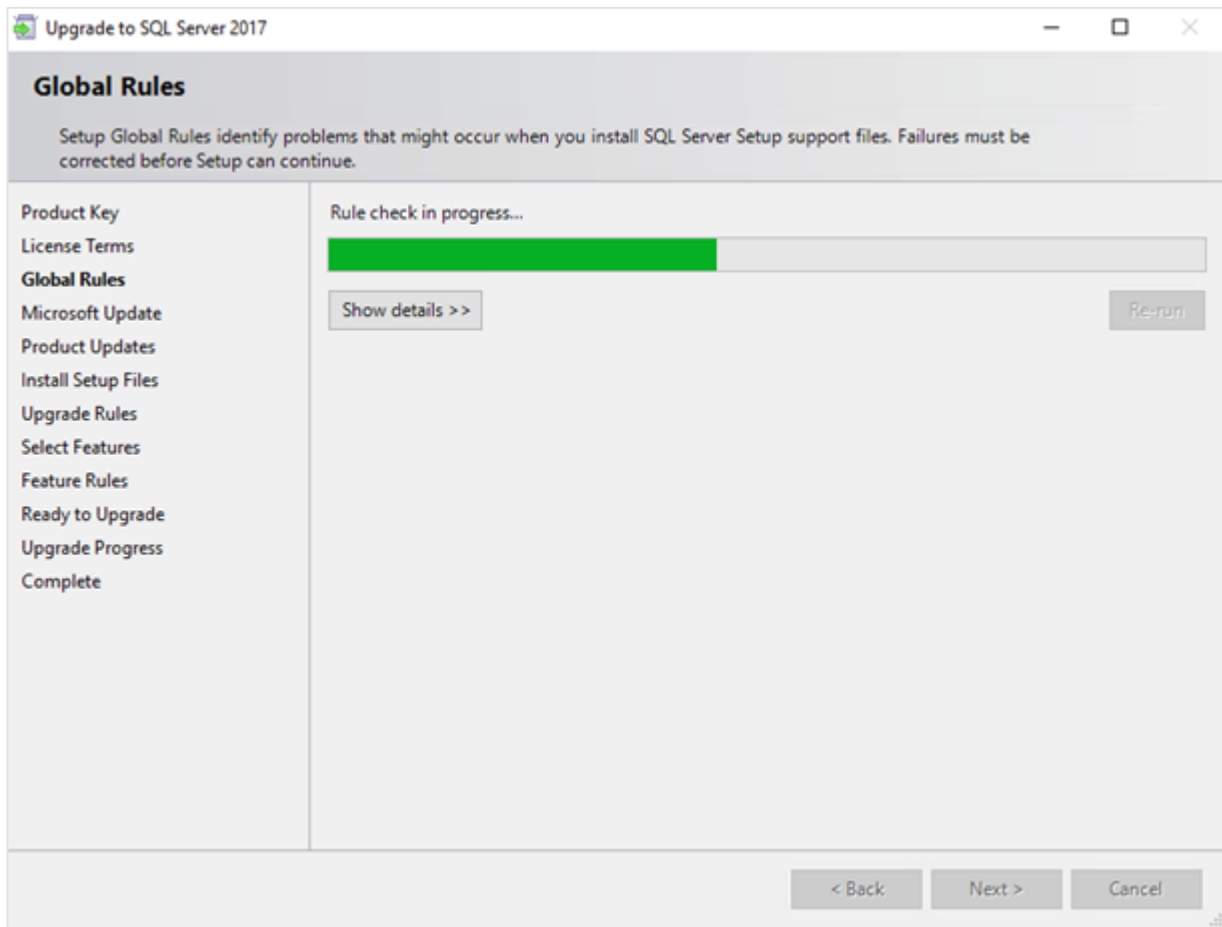
3. Click **Installation** on the left panel, and then click **Upgrade from a previous version of SQL Server** on the right panel. The following screen will be displayed:

The screenshot shows the 'Upgrade to SQL Server 2017' wizard window. The title bar reads 'Upgrade to SQL Server 2017'. The main heading is 'Product Key' with the instruction 'Specify the edition of SQL Server 2017 to install.' Below this, a list of steps is shown on the left: Product Key (selected), License Terms, Global Rules, Microsoft Update, Product Updates, Install Setup Files, Upgrade Rules, Select Features, Feature Rules, Ready to Upgrade, Upgrade Progress, and Complete. The main area contains a text block explaining that the user must validate the instance by entering a 25-character key from a Microsoft certificate, or specify a free edition (Developer, Evaluation, or Express). Below this, there are two radio button options: 'Specify a free edition:' with a dropdown menu currently showing 'Evaluation', and 'Enter the product key:' which is selected. A text input field for the product key is visible below the second option. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

4. Select the **Enter the product key** option and type the product key if the product key is not filled automatically. Click **Next** to continue. The following screen will be displayed:



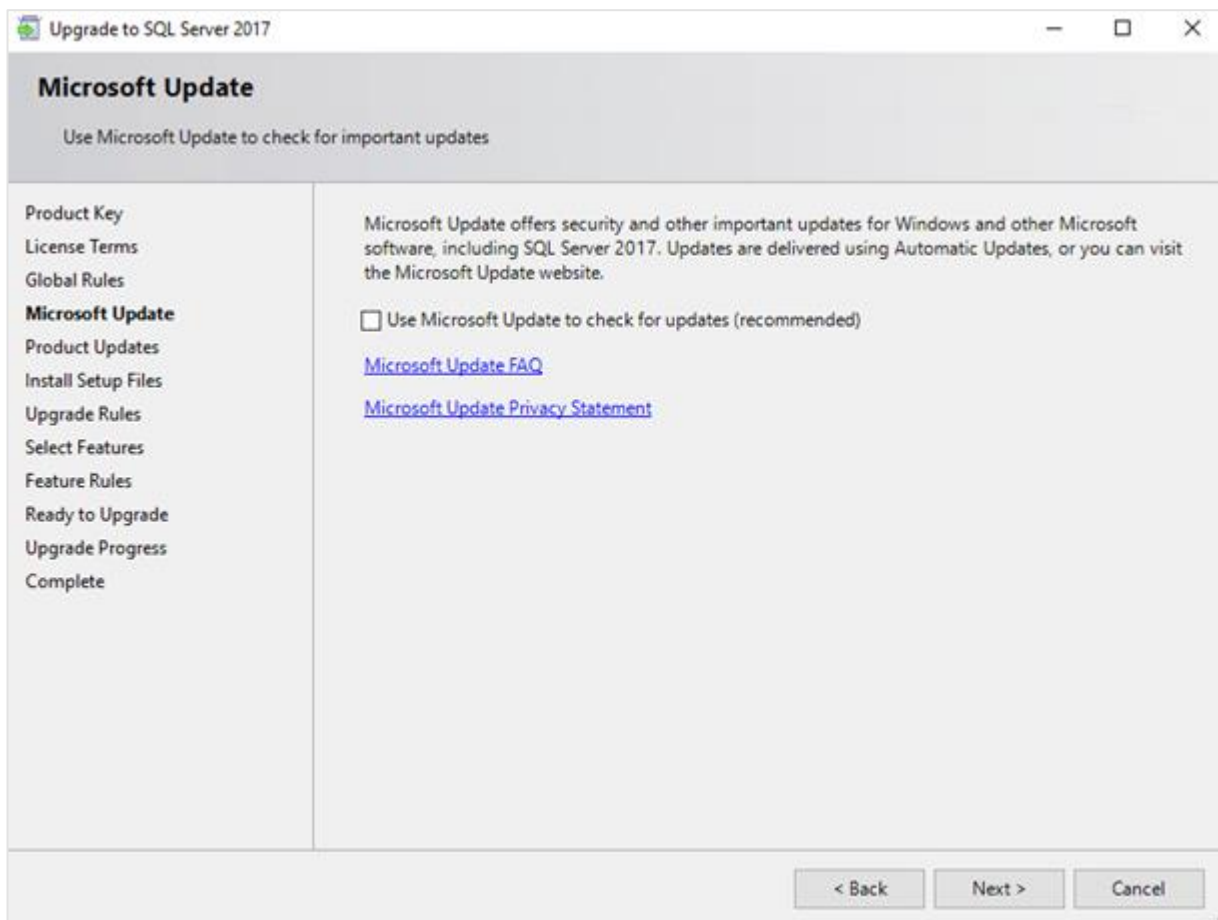
5. Select the **I accept the license terms** check box, and then click **Next**. The following screen will be displayed:



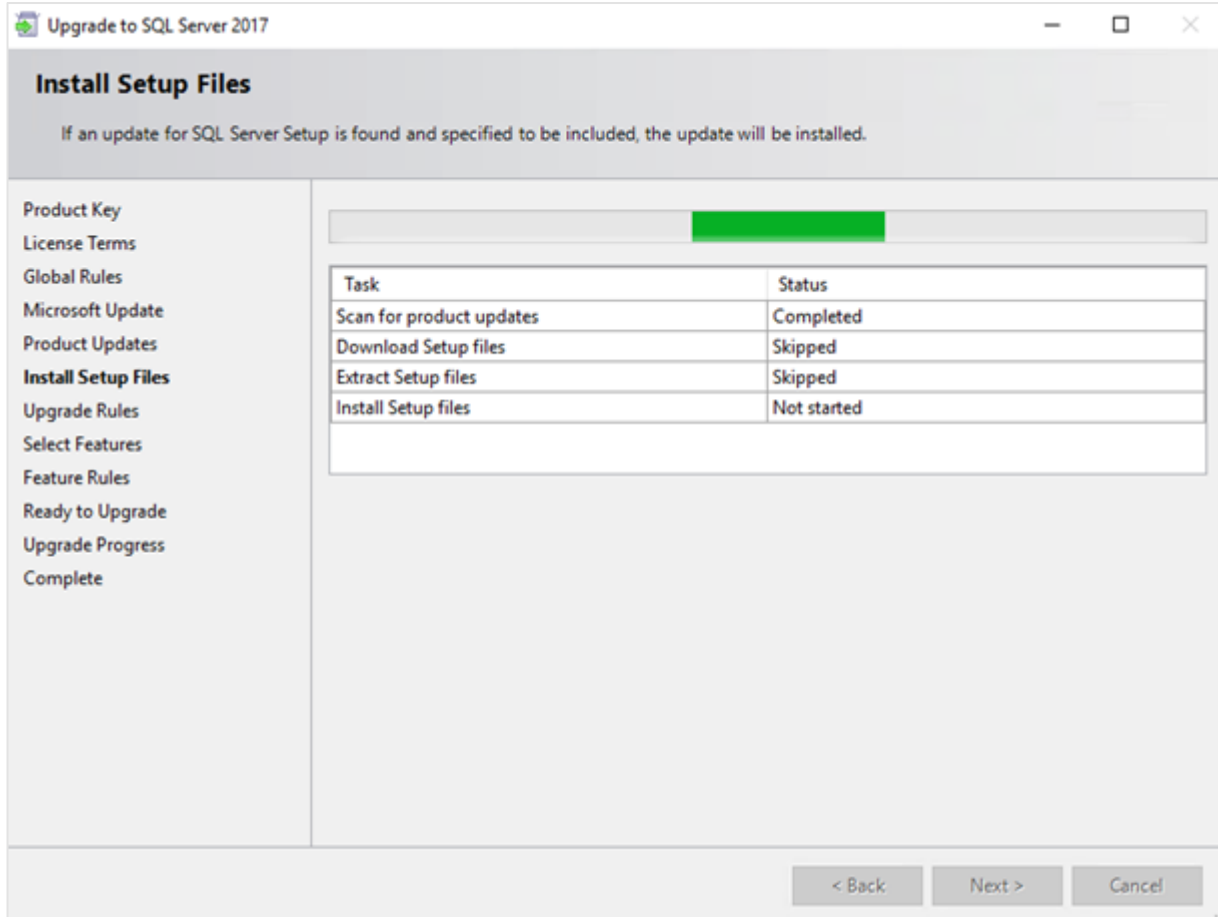
- Checks will be performed to identify the possible problems when installing the SQL Server Setup support files. The SQL Server Setup support files are needed for the installation of SQL Server 2017 and are automatically installed via this installation wizard. Click **Show details >>** to view the details of the checks. If all the checks are passed, the results will be displayed in the **Global Rules** screen. However, if a check has failed, a red icon will be displayed. You can click the hyperlink in the **Status** column to view the details of the check and error(s). Once the error is fixed, click **Re-run** to perform the checks again.

**Note:**

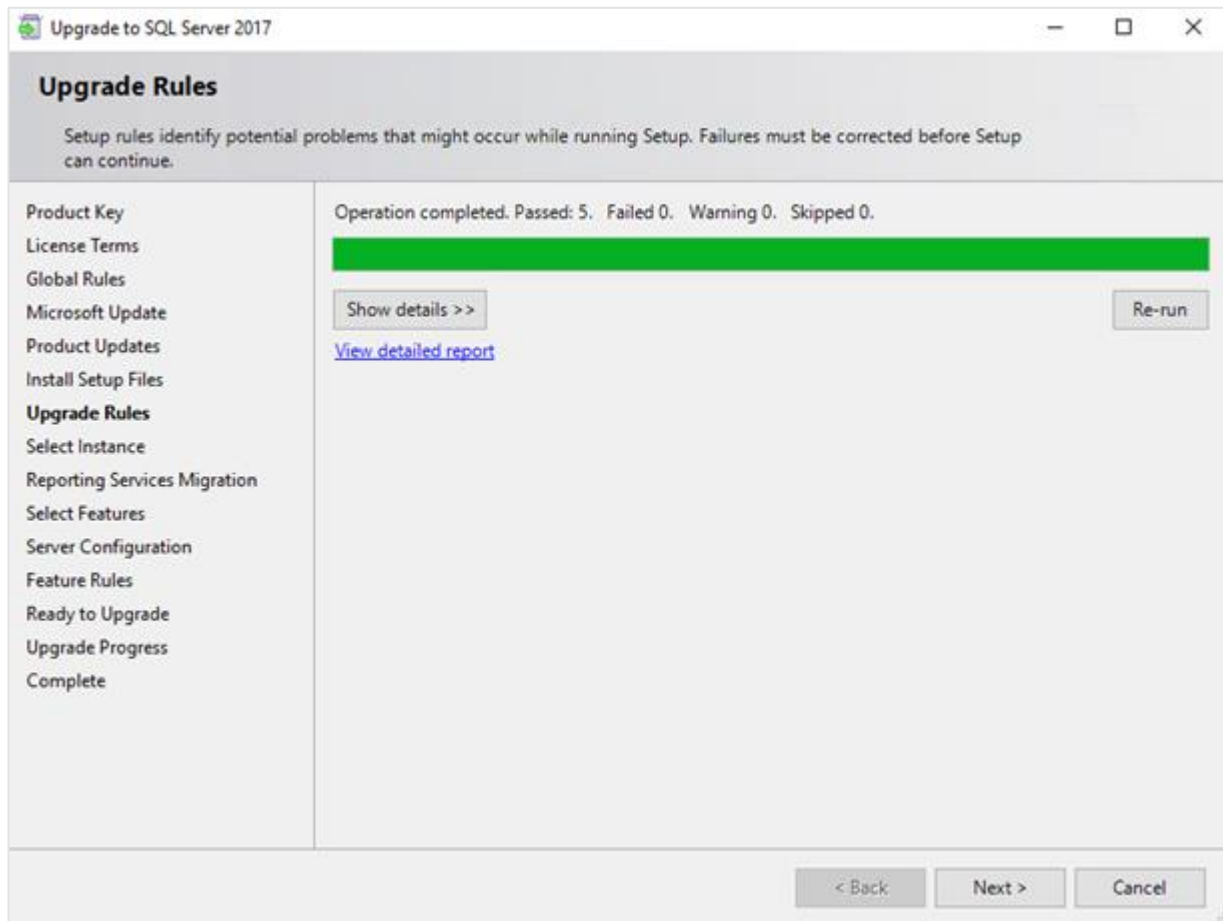
Some warnings about the firewall might be displayed. Despite the warnings, you can still continue with the installation. Depending on the situation, it is not necessary to close the installation wizard and restart. If all the checks are passed, the **Global Rules** screen will close automatically and the following screen will be displayed:



- The **Microsoft Update** screen allows you to check for new update files online. If you select the **Use Microsoft Update to check for updates (recommended)** check box, the **Product Updates** screen will be displayed whereby you can download the files. Otherwise, the **Install Setup Files** screen will be displayed.



8. The installation wizard will check for updates and install the available update files. Once the files are updated, the screen will close automatically and the next screen will be displayed:

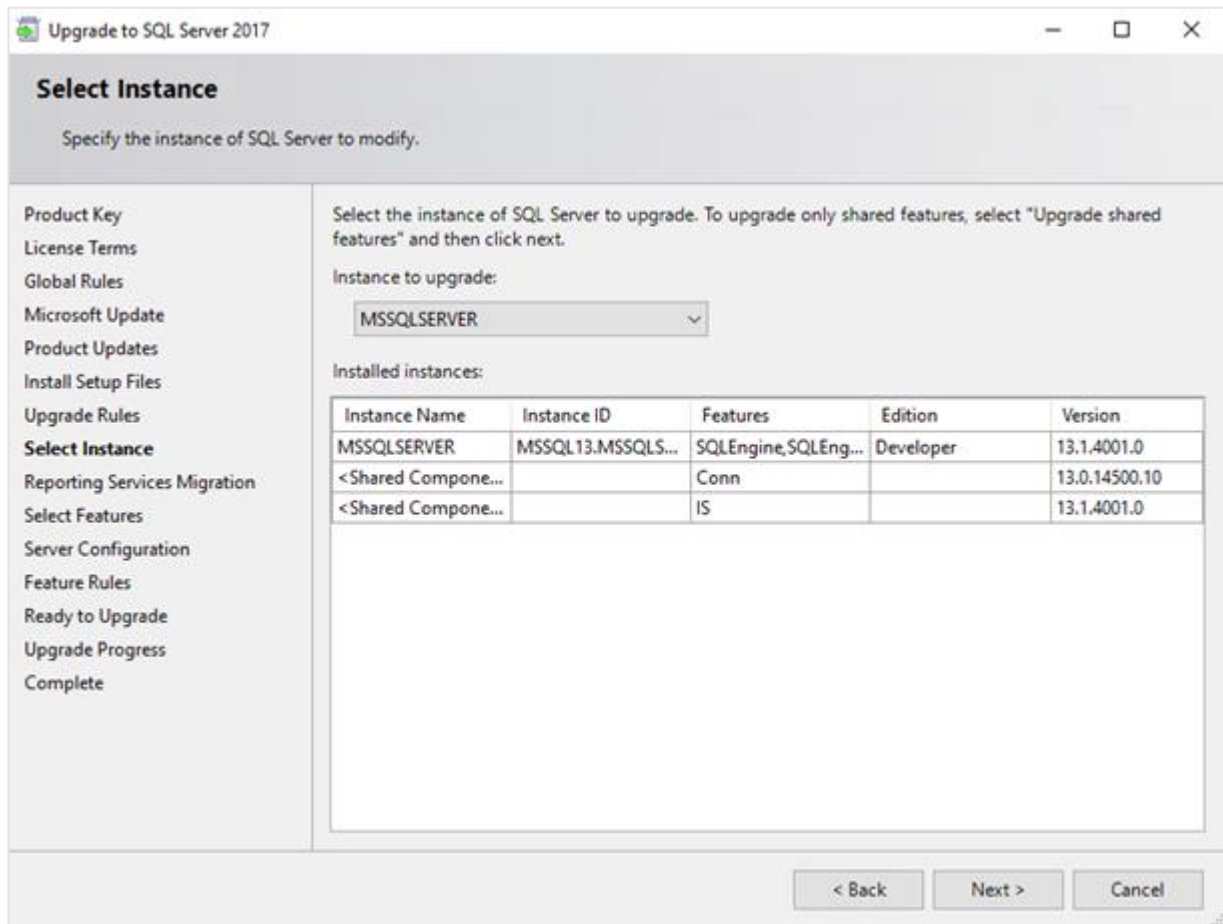


9. In the **Upgrade Rules** screen, checks will be performed to identify the problems that might occur during the installation. Click **Show details >>** to view the details of the checks. If a check has failed, a red icon will be displayed. You can click the hyperlink in the **Status** column for more information on the check and error(s). Once the issue is solved, click **Re-run** to perform the checks again.

**Note:**

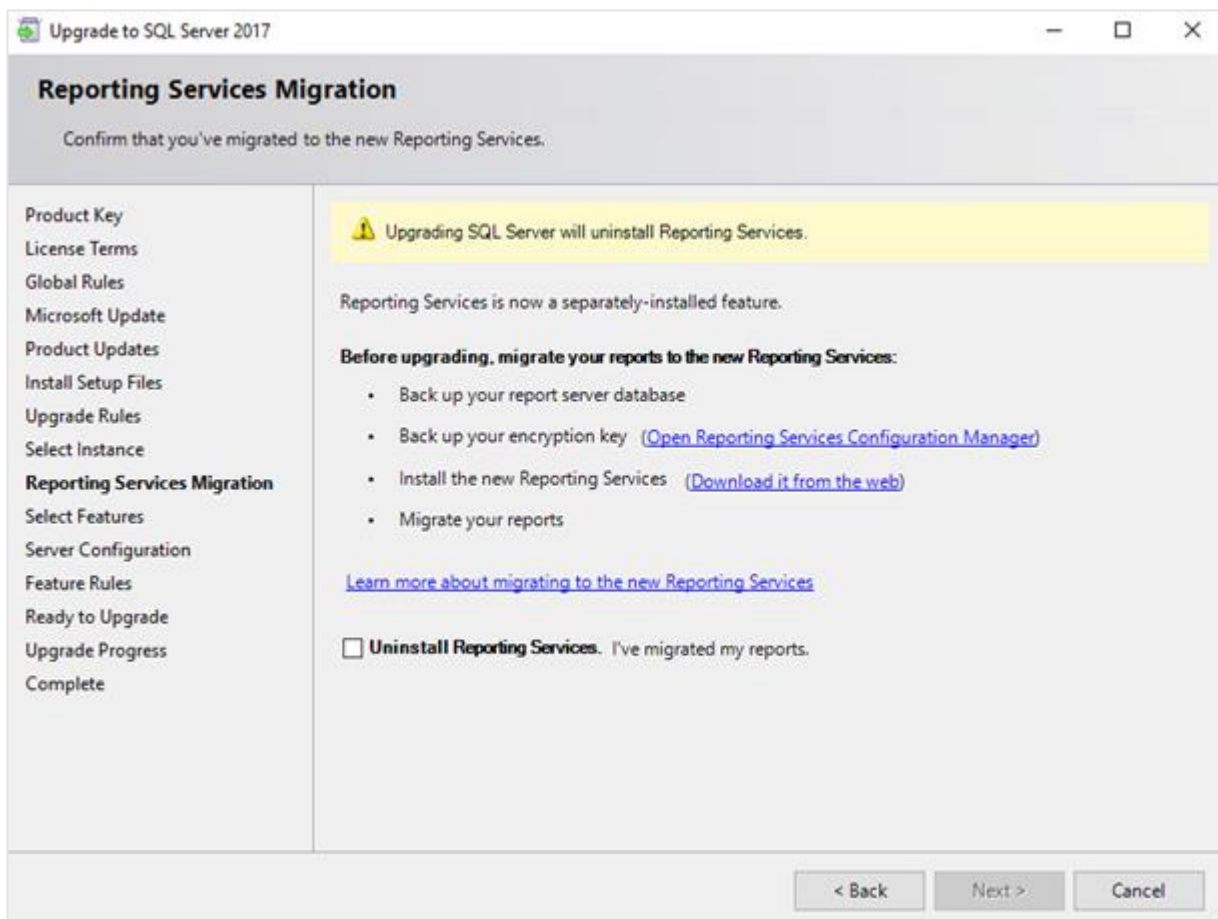
Depending on the situation, it is not necessary to close the installation wizard and restart.

10. Click **Next** and the following screen will be displayed:





11. At **Select Instance**, select the instance of the SQL server that you want to upgrade. The instance(s) will be displayed under the **Installed instances** section. The **Instance Name** column displays the name of the instance. The **Version** column displays the version of the instance. Version numbers that start with 10 apply to SQL Server 2008 (R2), version numbers that start with 11 apply to SQL Server 2012, and version numbers that start with 12 apply to SQL Server 2014, and version numbers that start with 13 apply to SQL Server 2016. The **<Shared Components>** line applies to the extra components of the SQL server that are installed, such as SQL Server Management Studio. Click **Next** and the following screen will be displayed:

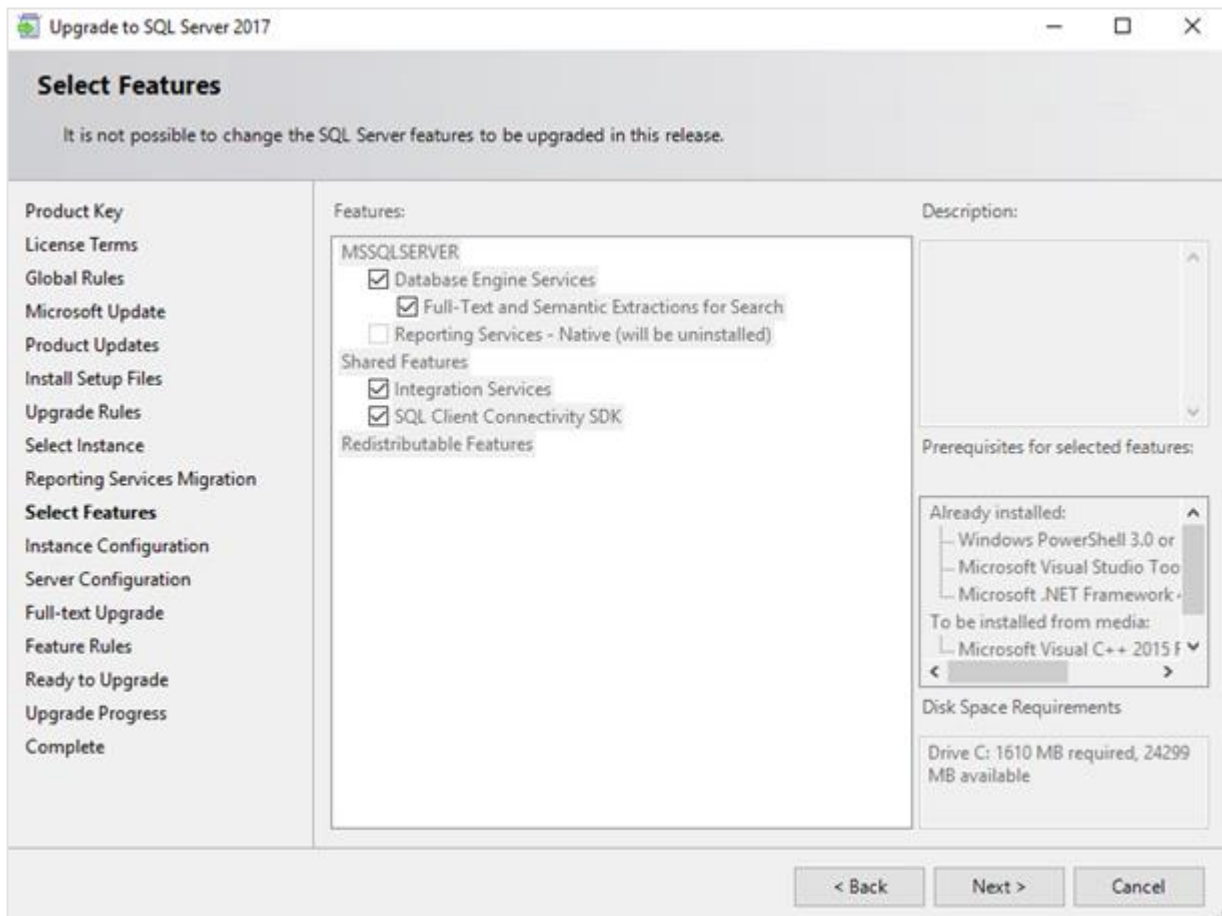


12. The **Reporting Services Migration** screen is displayed only if the reporting services component is installed for the previous SQL server version.

**Note:**

If Reporting Services is installed, this will be removed during the upgrade. Before you continue, back up your report server database, and your encryption key. Furthermore, Reporting Services for SQL Server 2017 is done via a separate installation, and you have to migrate the reports.

Once you have made a backup of the report server database, and the encryption key, you can select the **Uninstall Reporting Service** check box, and click **Next** to continue.



13. The **Select Features** screen displays the components that will be upgraded. By default, the components that will be upgraded will be selected. You cannot change anything in the screen. This screen will close automatically.

**Upgrade to SQL Server 2017**

**Instance Configuration**

Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installation path.

Product Key  
License Terms  
Global Rules  
Microsoft Update  
Product Updates  
Install Setup Files  
Upgrade Rules  
Select Instance  
Reporting Services Migration  
Select Features  
**Instance Configuration**  
Server Configuration  
Full-text Upgrade  
Feature Rules  
Ready to Upgrade  
Upgrade Progress  
Complete

Default instance  
 Named instance:

Instance ID:

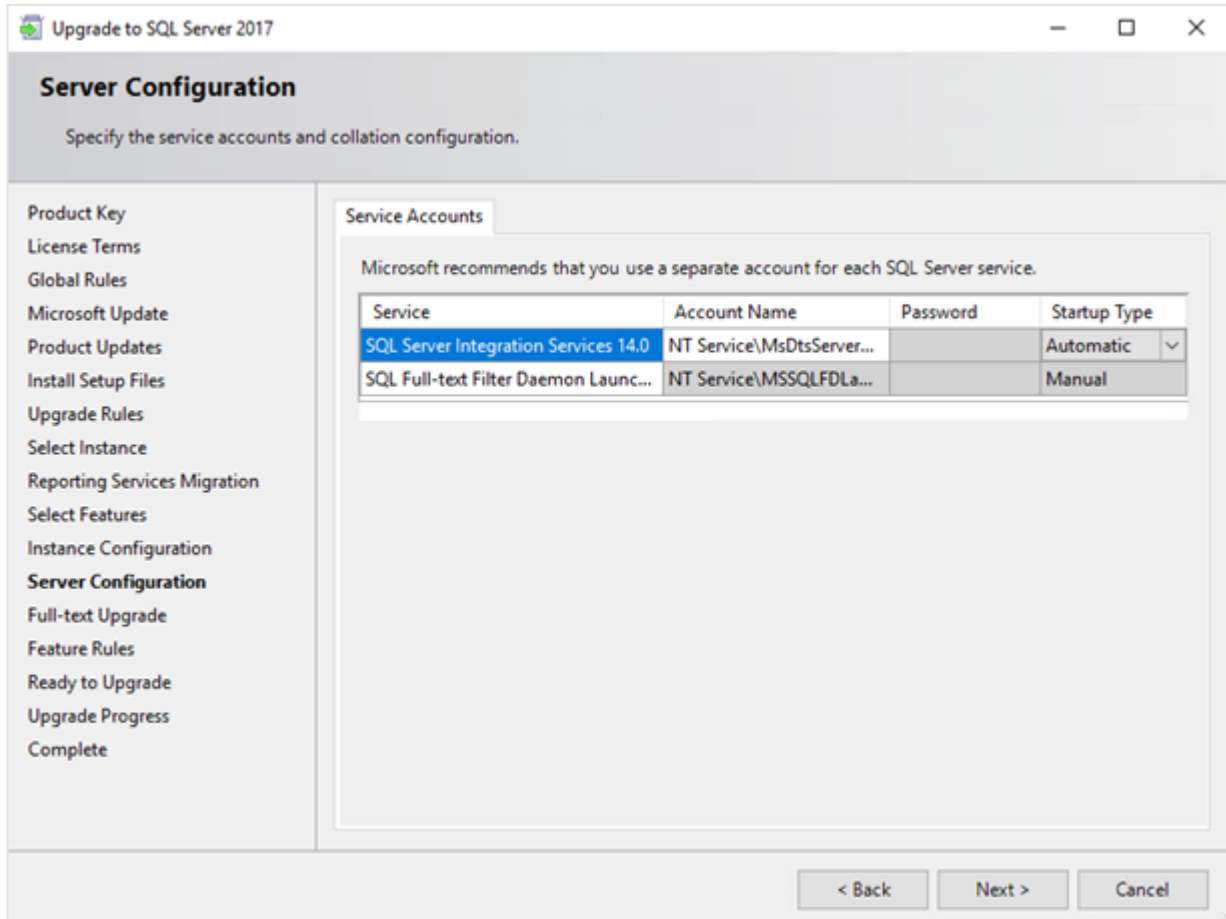
SQL Server directory: C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER

Installed instances:

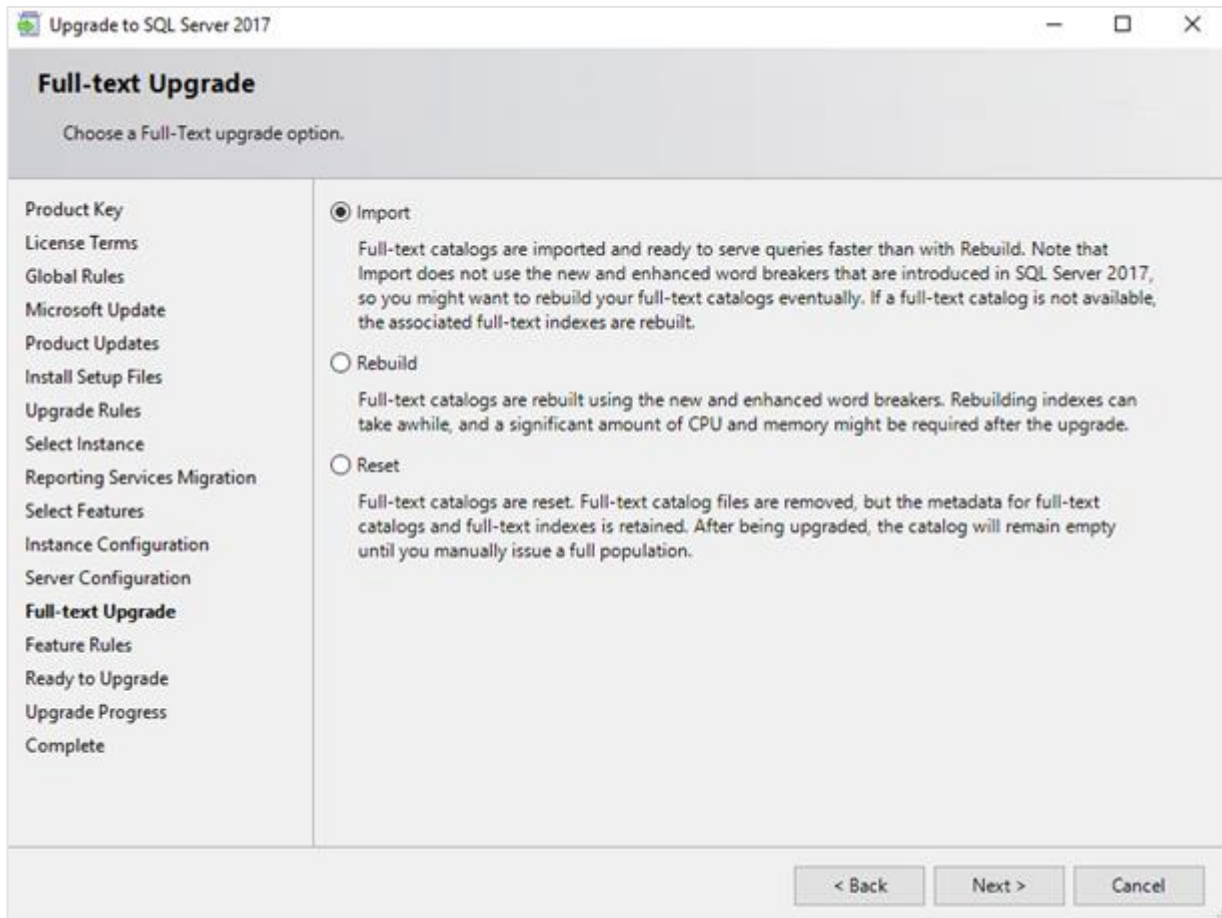
Instance Name	Instance ID	Features	Edition	Version
MSSQLSERVER	MSSQL13.MSSQLS...	SQLEngine,SQLEn...	Developer	13.1.4001.0
<Shared Compone...		Conn		13.0.14500.10
<Shared Compone...		IS		13.1.4001.0

< Back    Next >    Cancel

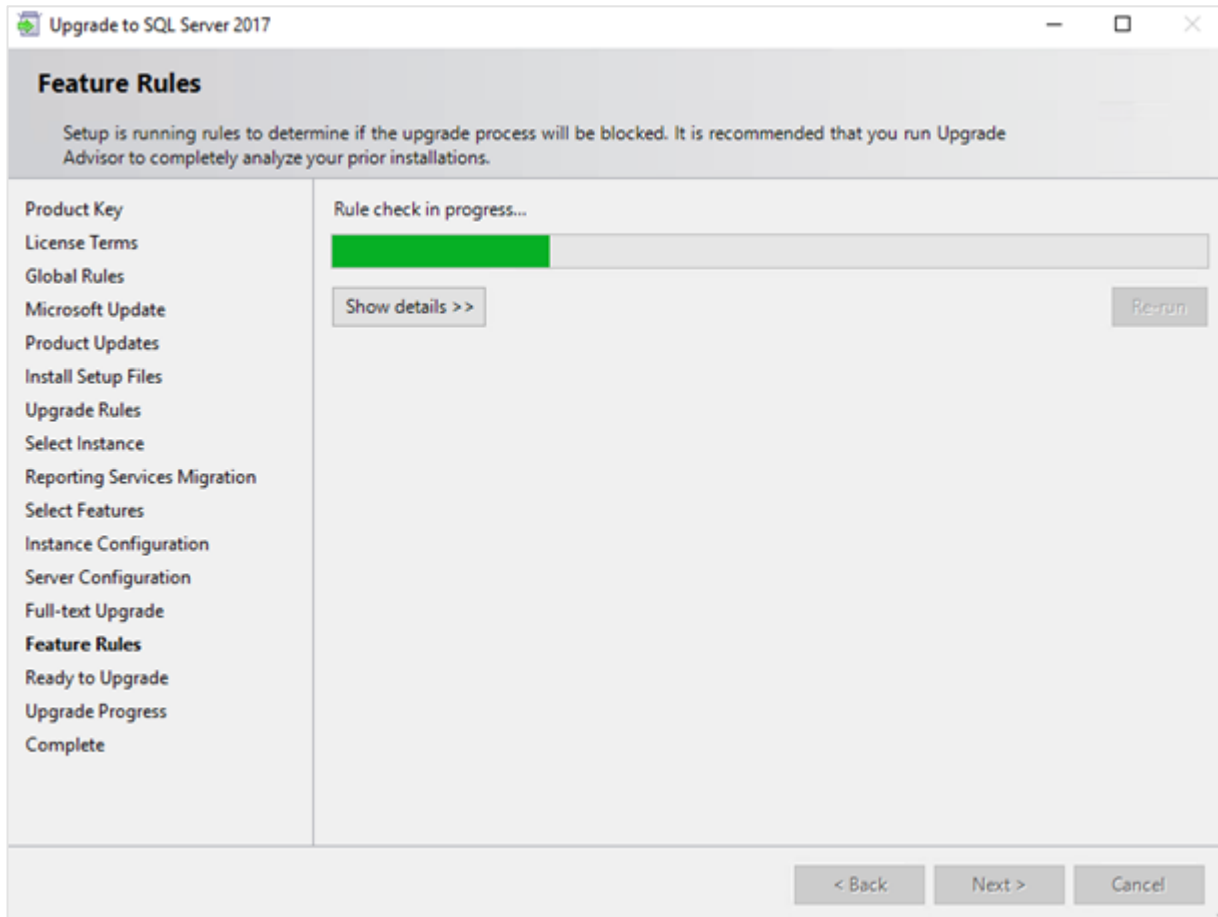
14. In the **Instance Configuration** screen, you can define the name and instance ID of the SQL server instance. Since you are upgrading the SQL server, you will not be able to change the name of the SQL instance. The SQL instance will use the same name. You do not have to change the instance ID and you can accept the value displayed in the screen. Click **Next** and the following screen will be displayed:



- Under the **Service Accounts** tab in the **Server Configuration** screen, you can define the account that you want to use to start the SQL Server 2017 services. You do not have to change anything. Click **Next** and the following screen will be displayed:



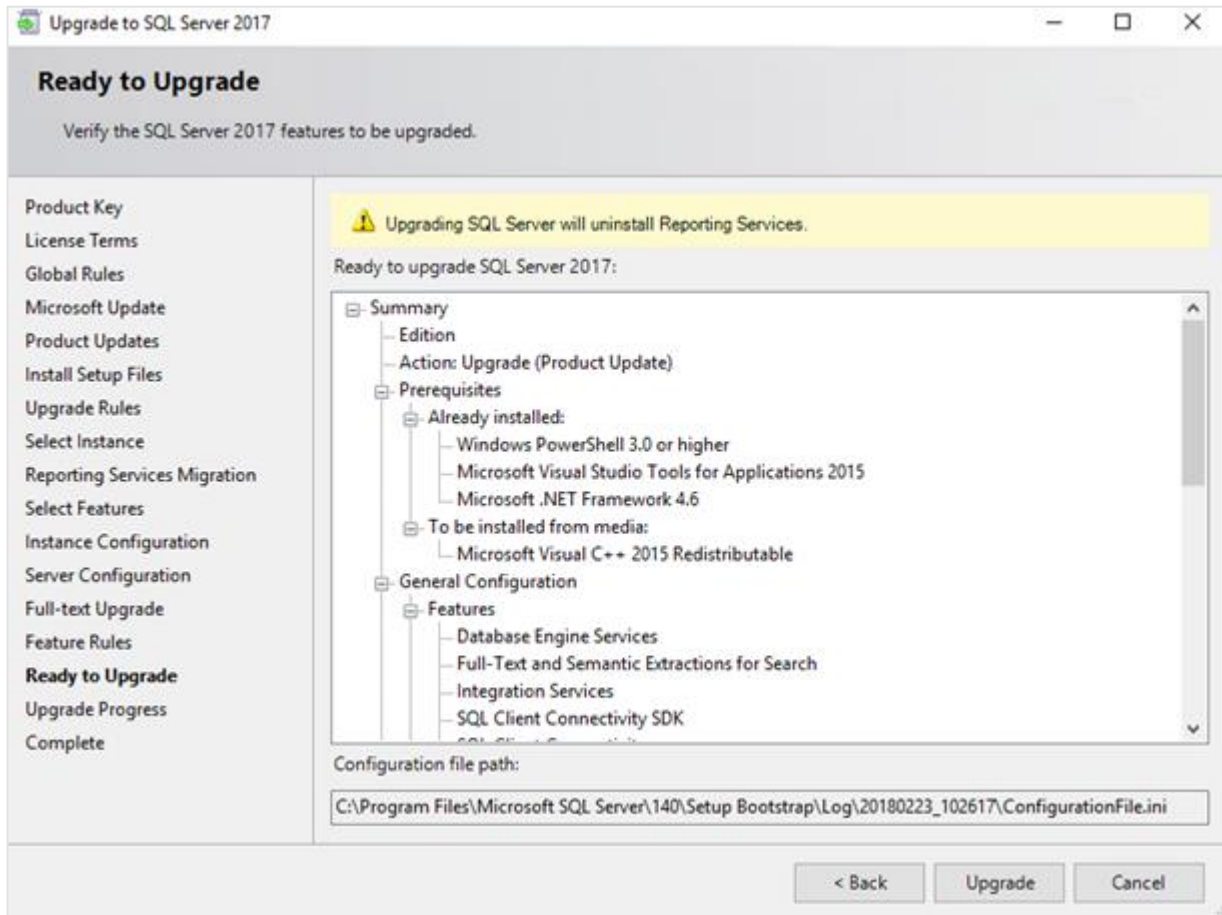
- The **Full-text Upgrade** screen is displayed only if the **Full-Text and semantic extractions for Search component of SQL server** is installed. This screen allows you to select an upgrade option for this component. This component is applicable if you use the SQL full text search to search for feeds in the timeline in Exact Synergy Enterprise. For this Exact Synergy Enterprise functionality, it is not important which option is selected. If you are using the SQL full text search component for other purposes, check with your system administrator to determine which option to select. Click **Next** to continue.



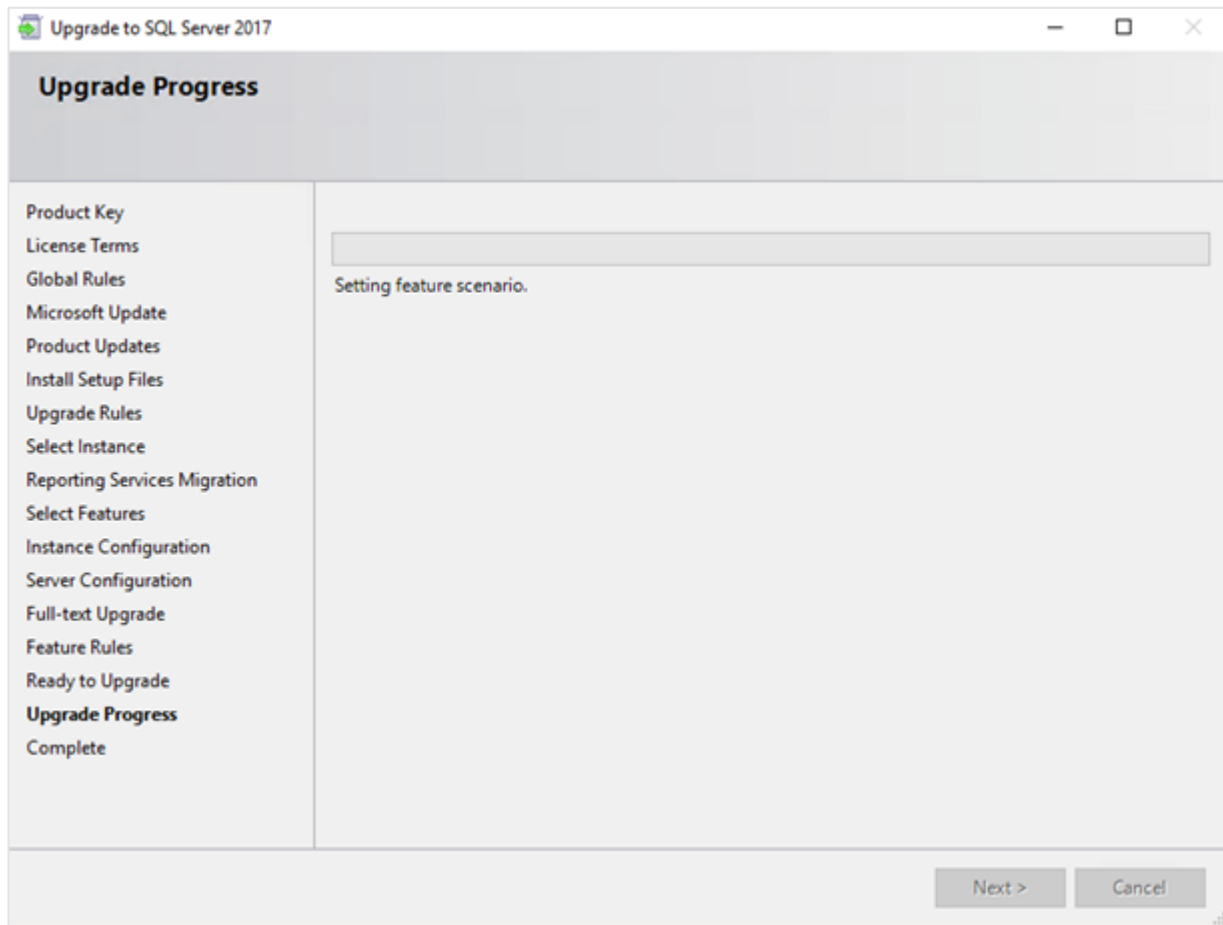
17. In the **Feature Rules** screen, checks will be performed to identify the problems that might occur during the installation. Click **Show details >>** to view the details of the checks. When a check has failed, a red icon will be displayed. You can click the hyperlink in the **Status** column for more information on the check and error(s). After you have fixed the issue, click **Re-run** to perform the checks again. The screen will automatically close after all the checks are successful.

**Note:**

Depending on the situation, it is not necessary to close the installation wizard and restart.



18. In the **Ready to Upgrade** screen, the list of upgrade and installation criteria will be displayed. Click **Upgrade** to start the upgrade and installation.

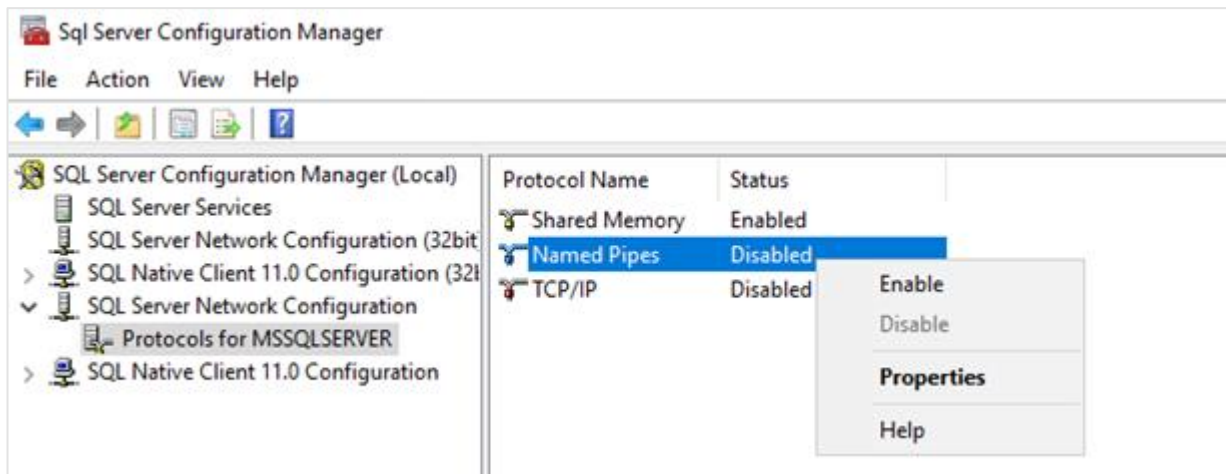


19. The **Upgrade Progress** screen displays the progress of the installation.
20. Once the installation has completed successfully, the installed components will be displayed with a green icon. Click **Close** to exit.



21. To be able to access the SQL server via a network, you have to activate some protocols. When working with a network environment, you have to check if the protocols are activated. If required, activate the protocols.

- Start (on the server where MS SQL Server 2017 is installed) **SQL Server Configuration Manager**. In Windows, go to **Start**, select **All Programs**, followed by **Microsoft SQL Server 2017**. Click **Configuration Tools**, and then **SQL Server 2017 Configuration Manager**.
- Click **SQL Server Network Configuration**.
- Select **Protocols for xxxx**. (“xxxx” has to be replaced by the name you have defined for the SQL server during installation).
- Right-click the protocols **Named Pipes** and **TCP/IP** and click **Enable** to enable these protocols.



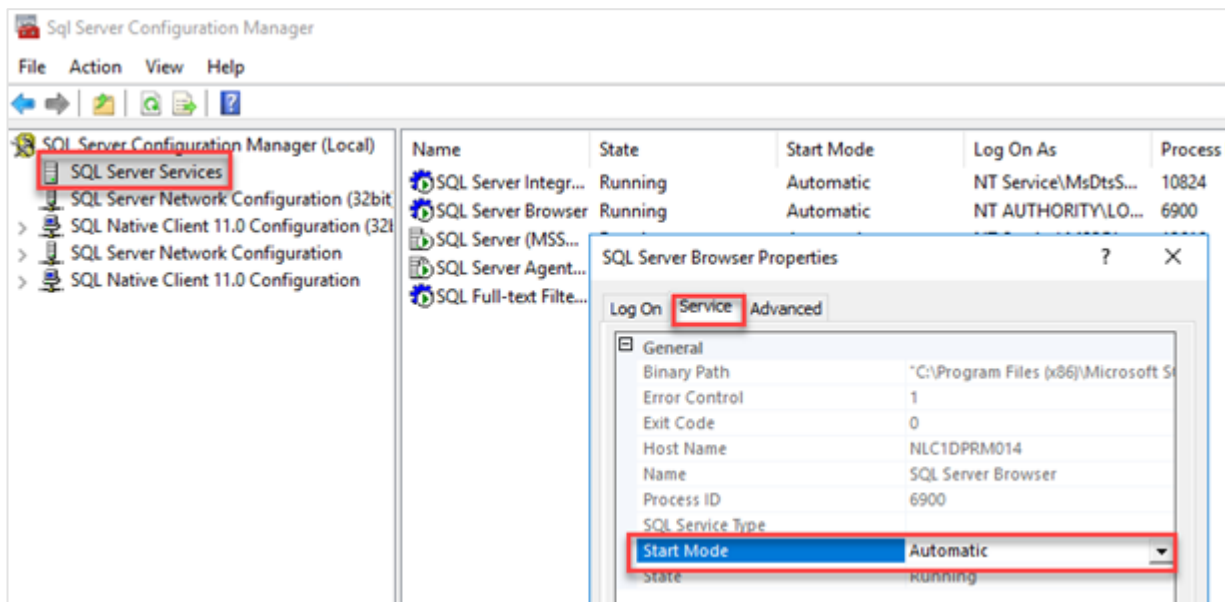
22. You might also need to start the **SQL Server Browser** service. This service is used for identifying the ports that the installation of SQL server listens to. When this service is not started, you can use the SQL server only locally. To check if this service is started, follow these steps:

- Start (on the server where MS SQL Server 2017 is installed) **SQL Server Configuration Manager**. In Windows, go to **Start**, select **All Programs**, followed by **SQL Server 2017**. Click **Configuration Tools**, and then **SQL 2017 Server Configuration Manager**.
- Click **SQL Server Services**.
- On the right side, the **SQL Server Browser** service is displayed.

**Note:**

When it is not started, the icon is red. When it is started, the icon is green. Ensure that the service starts automatically so that every time the system is restarted, the service will also start.

- Right-click **SQL Server Browser** and select **Properties**.
- In the **SQL Server Browser Properties** screen, click the **Service** tab.
- At **Start Mode**, select **Automatic**, as displayed in the following screen:



- Click **Apply** to apply the changes. The **SQL Server Browser** service will now start automatically every time the system is started.
- Next, start **SQL Server Browser**.
- In the **SQL Server Browser Properties** screen, click the **Log On** tab.
- Click **Start** to start the service. When the **Start** button is inactive, the **SQL Server Browser** service is already started and you do not have to start it.

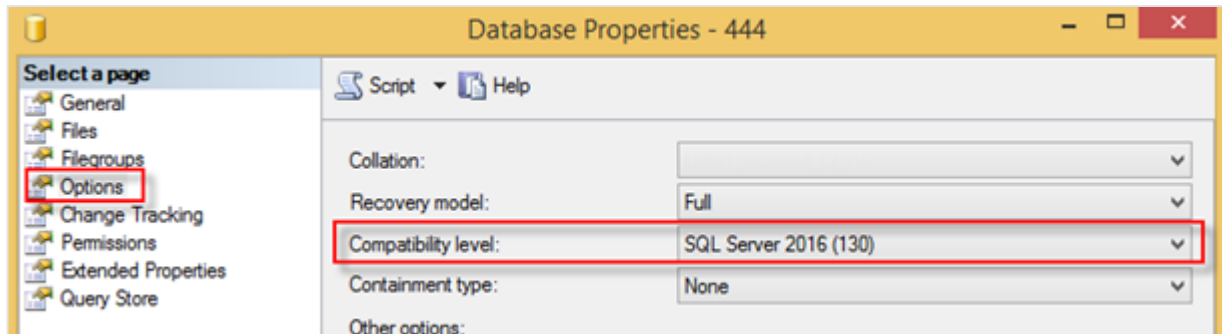
**Note:**

When you have a firewall, you have to configure the firewall to allow connections with SQL Server 2017. The default port for SQL Server 2014 is 1433. The SQL browser used UDP port 1434.

## Preparing your database to use Microsoft SQL Server 2017

### To change the compatibility level of your upgraded databases:

1. Go to Start → All Programs → Microsoft SQL Server 2017 → Microsoft SQL Server Management Studio.
2. Connect to the SQL server.
3. Expand the tree view until you see the databases.
4. Right-click a company database and select **Properties**.
5. In the **Database Properties** screen, select **Options** on the left panel and select **SQL Server 2017 (140)** at **Compatibility level** on the right panel, and then click **OK**.



#### Note:

You have to change the **Compatibility level** for every company database.

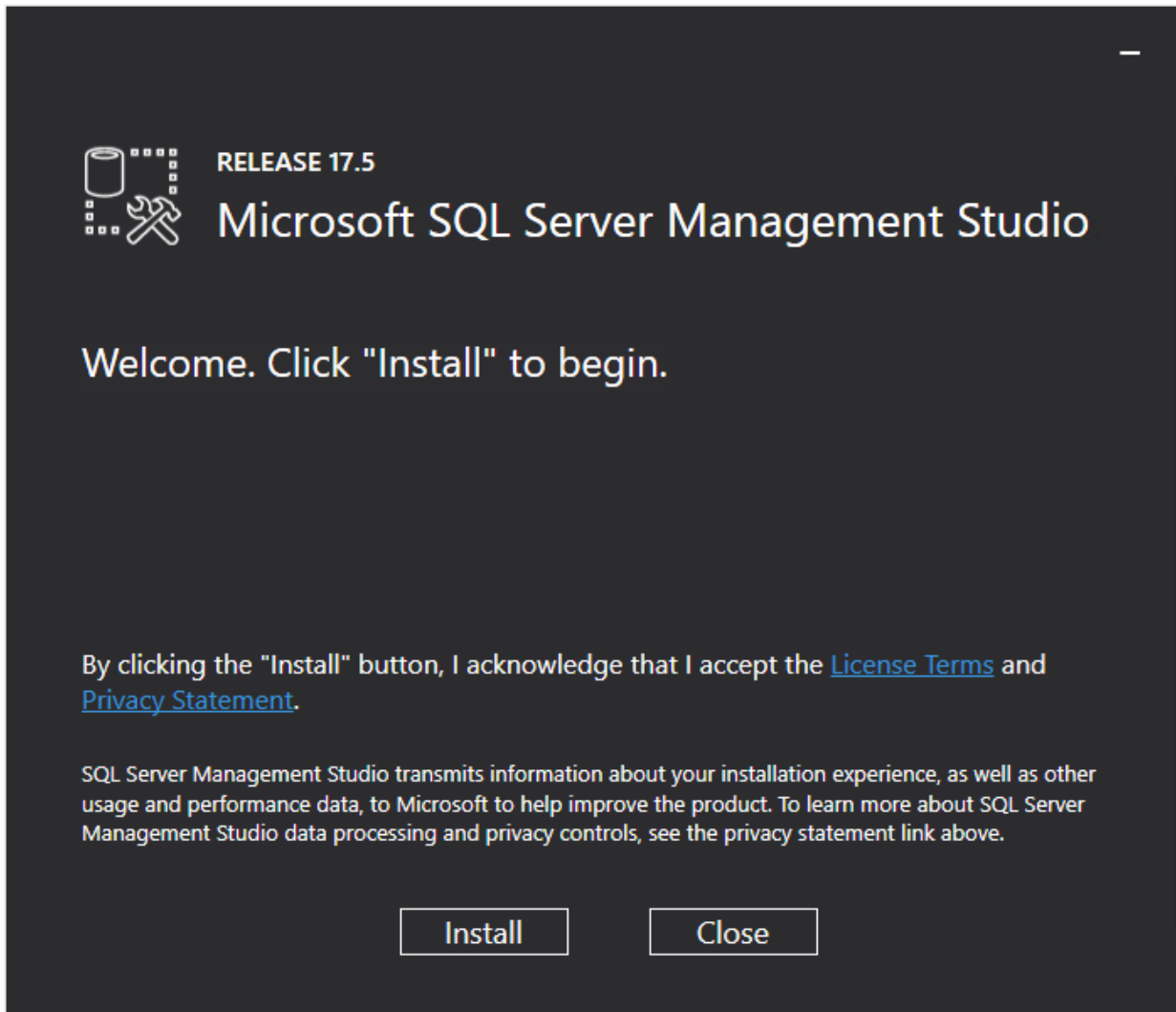
## Installing SQL Server Management Studio for Microsoft SQL Server 2017

### To install SQL Server Management Studio:

The next step is to install SQL Server Management Studio. SQL Server Management Studio is an application for managing the SQL server. With SQL Server Management Studio, you can create and restore backups, change the database settings, and give the users SQL server rights. However, if you already have an older version of SQL Server Management Studio installed, it is advisable to install the most recent version of SQL Server Management Studio. The new version will be installed with the previous version so both versions can be used.

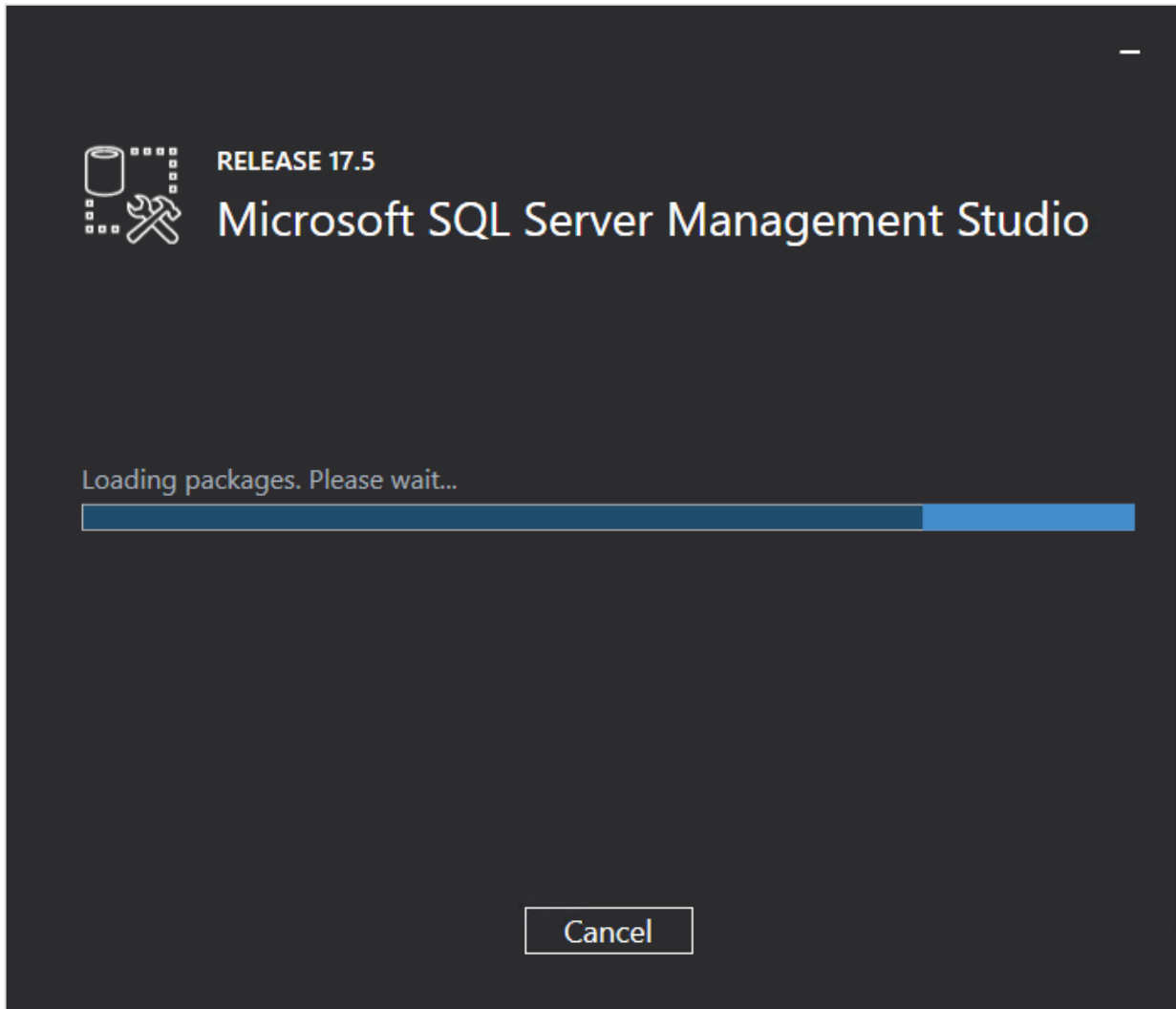
- Log in as an administrator on the system where you have installed SQL Server 2017.
- The setup file for SQL Server Management Studio can be downloaded from the Microsoft website (<https://msdn.microsoft.com/library/mt238290.aspx>). Save this file on the system where MS SQL Server 2017 is installed.
- Start the installation by double-clicking the downloaded file.

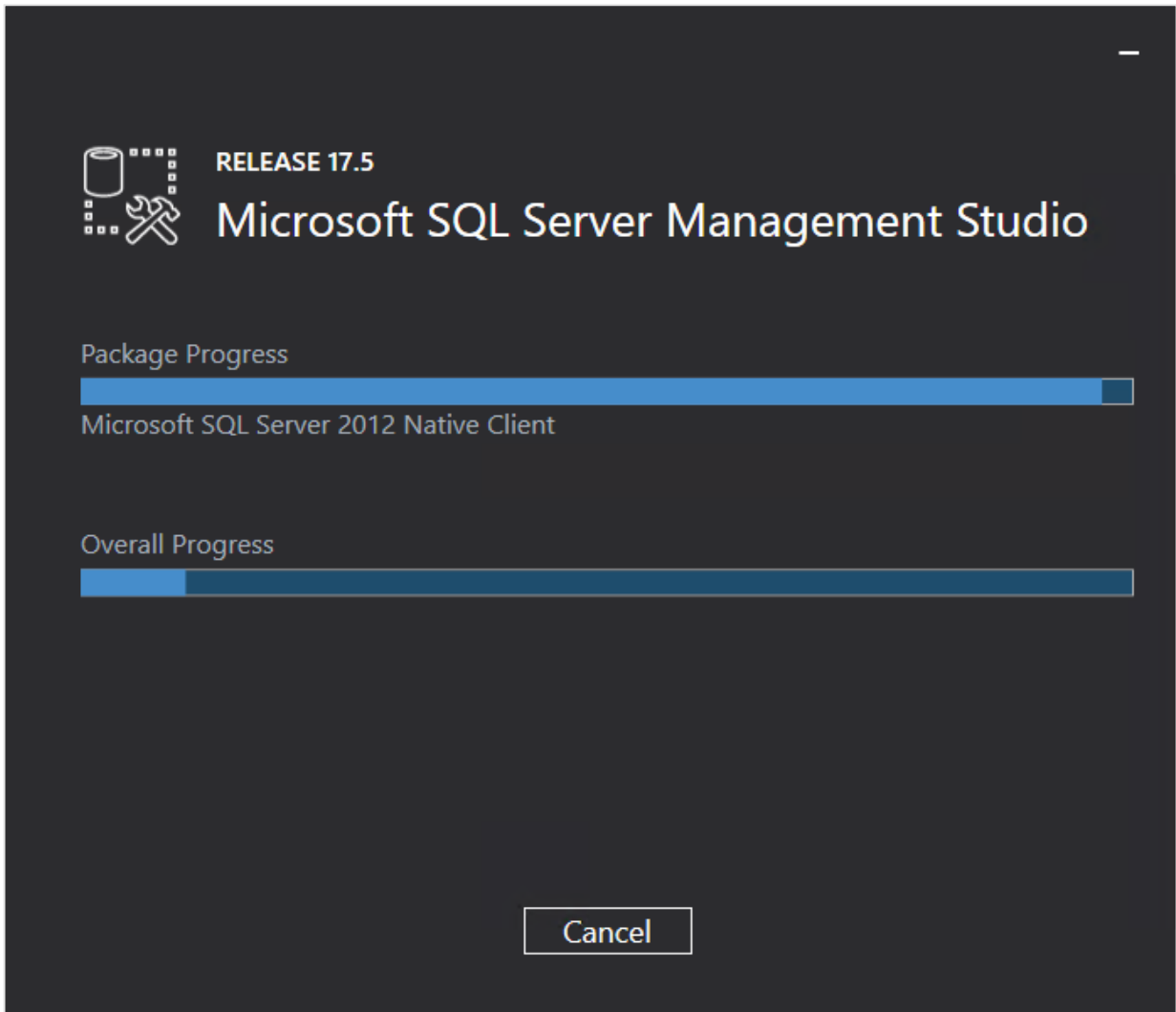
The following screen will be displayed:



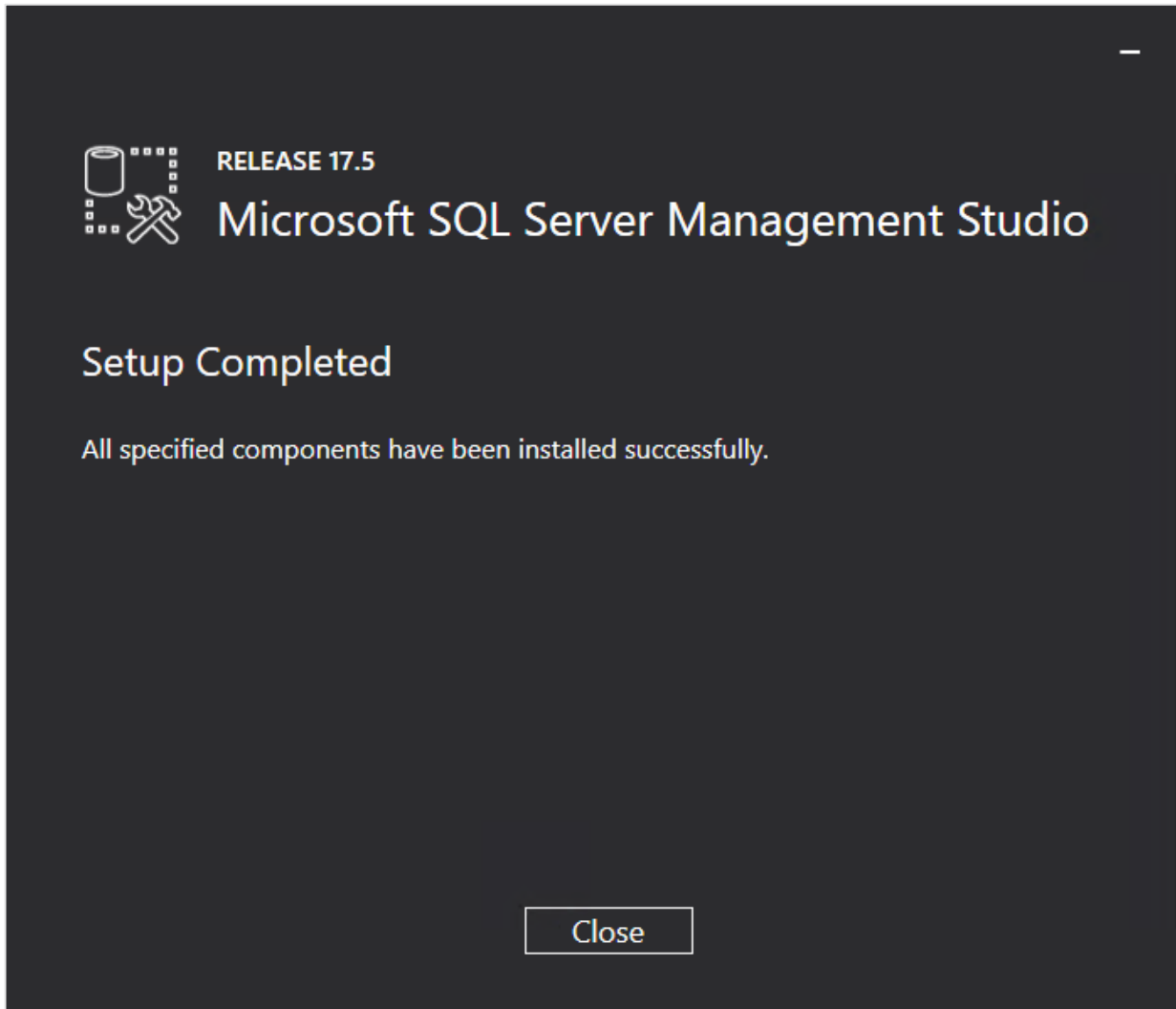
Click **Install** to start the installation.

During the installation, you can follow the progress of the installation. The following screens will be displayed. The installation might take some time.





Once the installation is completed, the following screen will be displayed. You have to restart the system to complete the setup.



## 2.7.6 Installing SQL Server Reporting Services (SSRS)

SQL Server Reporting Services (SSRS) is a server-based report generating software system from Microsoft. SSRS is part of Microsoft SQL Server, and can be used by the Reporting Services Integration functionality in Exact Synergy Enterprise. SSRS is also used by the dashboards in Exact Globe Next with extended functionality.

From SQL Server 2017 onwards, SSRS must be installed via a separate installer. The following describes the SSRS installation.

**Note:**

Before installing SSRS, it is advisable to check whether SSRS is already installed in your system.

**To check SSRS:**

To check if SSRS is already installed in your system, do the following:

1. Log in to the server that has Microsoft SQL Server installed.
2. Search in the Start menu for “Report Server Configuration Manager”.
3. If the “Report Server Configuration Manager” is available, this means the reporting services feature is already installed. However, if “Report Server Configuration Manager” is not available, install the reporting services feature.

**To install SSRS:**

1. Download the setup file from <https://www.microsoft.com/en-us/download/details.aspx?id=55252>.
2. Log in as an administrator on the server where the SQL server is installed.



3. Open **SQLServerReportingServices.exe**. The following screen will be displayed:



4. Click **Install Reporting Services**. The following screen will be displayed:



5. Select the **Enter the product key** option, and type the product key for SQL Server 2017.

6. Click **Next**. The following screen will be displayed:



7. In the **Review the license terms** screen, read the license terms. If you agree with the license terms, select the **I accept the license terms** check box.

8. Click **Next**. The following screen will be displayed:

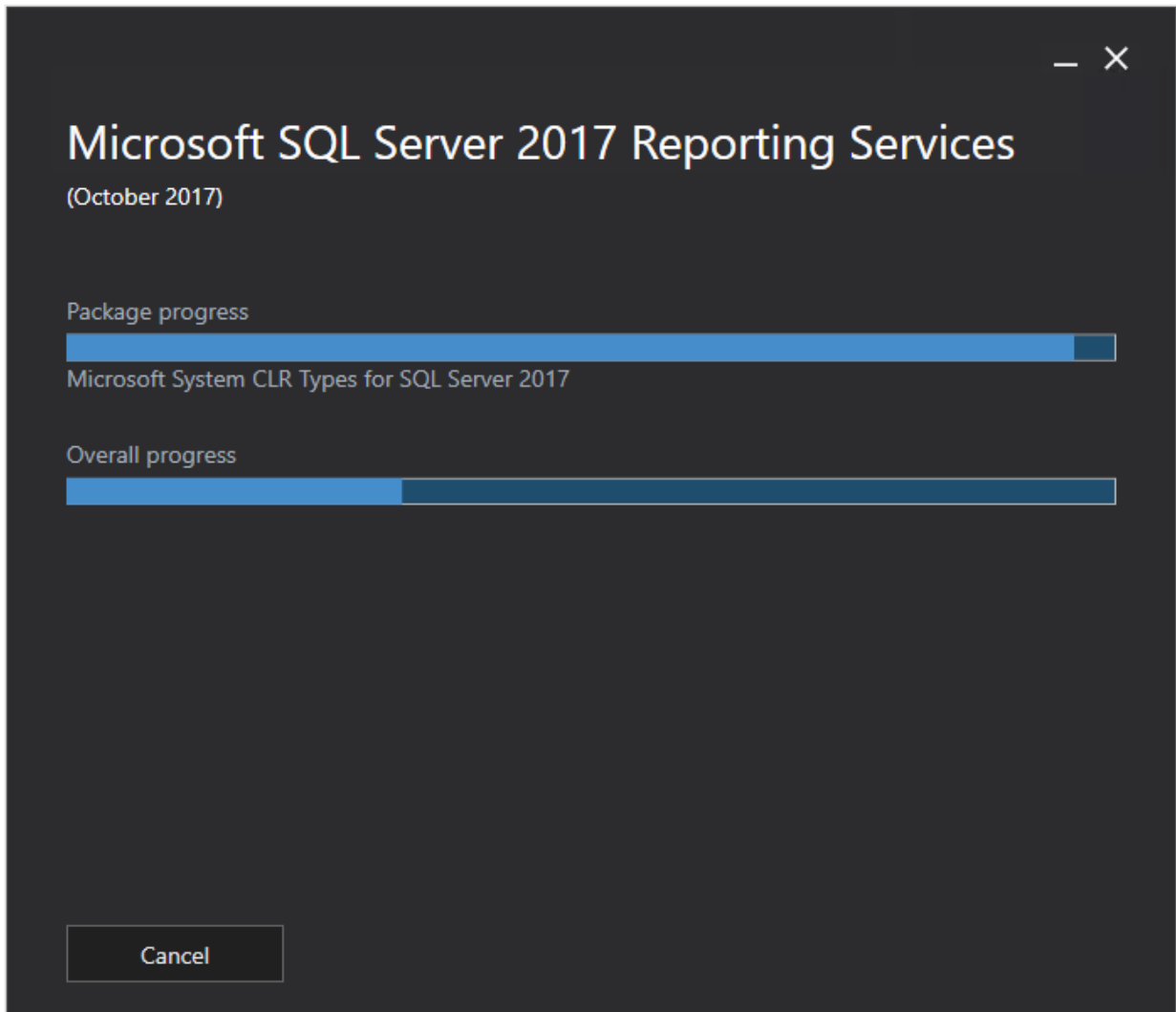


9. Click **Next**. The following screen will be displayed:

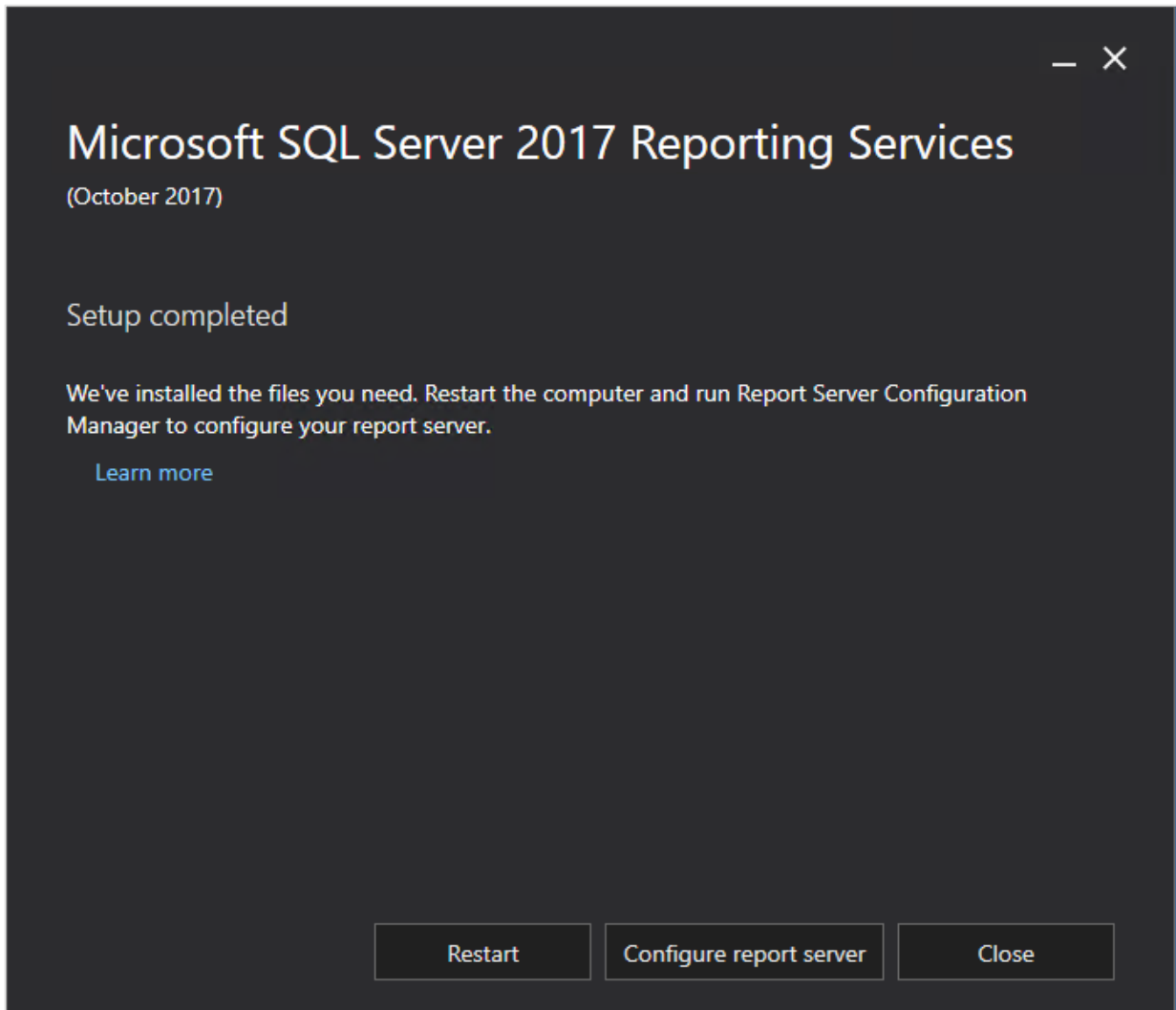


10. Select the location to install SSRS.

11. Click **Install**. The following screen will be displayed:



12. Once the installation is completed, the following screen will be displayed:



13. Restart the system.

If you upgraded from the previous version of the SQL server to SQL Server 2017, and have a backup of your report server database and encryption, you have to select or restore the files in Report Server Configuration Manager.

- Firstly, restore the backup of the report server database via SQL Server Management Studio.
- Start **Report Server Configuration Manager**, and connect to the SQL server.
- In **Report Server Configuration Manager**, select the report server database in the **Database** menu, and restore the backup of the encryption key in the **Encryption keys** menu.

# 3. INSTALLATION AND DATABASE CREATION

Basically, installing Exact Synergy Enterprise involves three major steps. These are:

- installing the software,
- creating the database, and
- configuring the background jobs.

This chapter discusses the installation of the software and the creation of the database. Configurations of the background jobs and applications that support functions in Exact Synergy Enterprise are more elaborate and are discussed in *Chapter 5 Background Jobs Configuration*.

**Note:**

Before installing Exact Synergy Enterprise, the system must first be prepared as discussed in *Chapter 2 Technical Implementation*.

## 3.1 INSTALLING EXACT SYNERGY ENTERPRISE

Exact Synergy Enterprise can be installed from the compact disc installation media (CD-ROM) or from the Internet. The Exact Synergy Enterprise installer is available in different languages. The language of the installer is not the language of Exact Synergy Enterprise. When Exact Synergy Enterprise is operational, you can change the user interface language of Exact Synergy Enterprise.

You can also choose to install Exact Synergy Enterprise using the alternative MSI installation file. For more information, see *7.2 Installing Exact Synergy Enterprise Using MSI*.

**Caution:**

During installation, the installer will stop the IIS web server. If you are upgrading or installing Exact Synergy Enterprise in a critical web server in service, plan the installation time carefully to minimize web service disruption.




### 3.1.1 Installing Exact Synergy Enterprise from the CD-ROM

You can select which language to use while installing Exact Synergy Enterprise by starting the appropriate executable file in the installation CD-ROM:

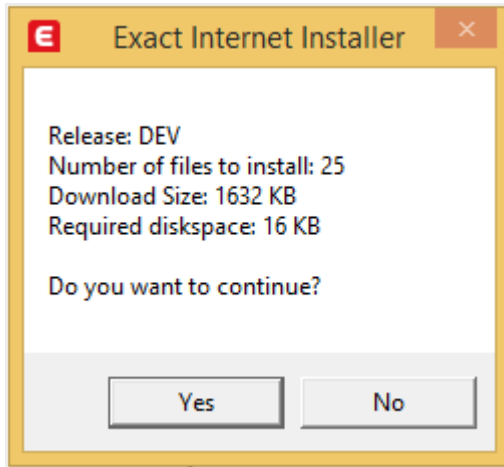
Installer Language	Executable File Name
American English	Setup_AE.exe
German	Setup_DE.exe
Dutch	Setup_NL.exe

#### To install Exact Synergy Enterprise from CD-ROM:

1. Insert the installation CD-ROM in the CD-ROM drive.
2. Go to the **Start** menu, click **Windows Explorer** and browse to the installation CD-ROM.
3. Double-click **Setup\_AE.exe** to start the installer in American English. You can start the installer in German or Dutch by double-clicking **Setup\_DE.exe** or **Setup\_NL.exe** instead.

4. At **Local installation directory**, type the full path where you want to install the Exact Synergy Enterprise application components, for example, “C:\Program Files\SynergyNET”. You can also select the folder by clicking the  icon.

- Click **OK** and wait while the installer calculates the disk space requirement.



- When prompted, click **Yes** to continue installation.
- Wait a few minutes while Exact Synergy Enterprise is being installed. You can click **Cancel** to abort the installation but this is not recommended as the partial installation cannot be rolled back.
- Once completed, the installer will ask whether you want to start Exact Synergy Enterprise.
- Click **Yes** to start Exact Synergy Enterprise and begin creating the database. Take note that clicking **Yes** will open Exact Synergy Enterprise in Microsoft Edge using normal HTTP protocol. If your server allows only HTTPS connection or you want to start Exact Synergy Enterprise using HTTPS, click **No** instead and open it manually.

**Caution:**

If the current Windows user account is not the designated Exact Synergy Enterprise administrator, click **No**. Although you can start Exact Synergy Enterprise to specify the license and create the database, the database initialization will fail and the newly created database will be unusable.

**Note:**

Loading Exact Synergy Enterprise for the first time takes longer than usual. This is normal.

You can proceed to the next step by creating the database as described in 3.2 *Initializing Exact Synergy Enterprise*.

### 3.1.2 Installing Exact Synergy Enterprise from the Internet

In order to install Exact Synergy Enterprise from the Internet, you require the **Exact Internet Installer**. You can download this installer from one of the following web sites:

- **Customers** — <https://customers.exact.com>
- **Resellers** — <https://partners.exact.com>
- **Employees** — <https://employees.exact.com>

The **Exact Internet Installer** is available in several languages. Download the appropriate file for the language that you want to use to install Exact Synergy Enterprise:

Installer Language	Executable File Name
American English	ProductUpdater_T15_AE.exe
German	ProductUpdater_T15_DE.exe
Dutch	ProductUpdater_T15_NL.exe

**Caution:**

The Exact Synergy Internet installer (ProductUpdater\_T8) cannot be used for installing Exact Synergy Enterprise.

**To install Exact Synergy Enterprise from the Internet:**

1. Go to the **Start** menu, click **Windows Explorer** and browse to the folder where you saved the downloaded **Exact Internet Installer**.
2. Double-click the **Exact Internet Installer**.

**Exact Synergy Enterprise Installation**

Product line: Exact Synergy Enterprise

Install mode: Internet installation

Please enter your credentials

Web site: https://update.exactsoftware.com

User Name: Gohj175745

Password: [Empty]

Domain: exact-software

Authenticate

Installation

Release: 260SPDEV

Installation directory: C:\Program Files (x86)\Exact Synergy Enterprise

Update software: During download

Download demo company:


1.0.0.508

Help OK Cancel

3. At **Install mode**, select **Internet installation**.

**Note:**

The URL where Exact Synergy Enterprise will be downloaded is displayed at **Web site**. By default, this is *https://update.exactsoftware.com*. You do not need to change this unless informed otherwise by an Exact representative.

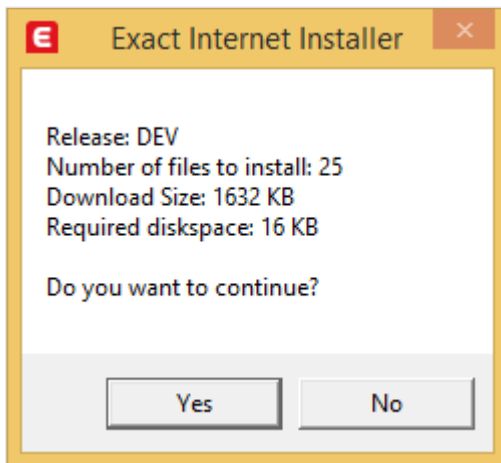
4. At **User name** and **Password**, type your user name and password. Then, type the domain of the user account at **Domain**. For **Exact** customers and resellers, the domain is **EWEB**.
5. Once you have defined the fields in the **Please enter your credentials** section, click **Authenticate**.
6. At **Release** under the **Installation** section, select the release that you want to install.
7. At **Installation directory**, type the full path where you want to install the Exact Synergy Enterprise application components, for example, "C:\Program Files\SynergyNET". You can also select the folder by clicking the  icon.

8. At **Update software**, select one of the following options:
  - **During download** — The installer will stop the IIS web server while downloading and installing the files. Once the files have been downloaded and installed, the installer will restart the IIS web server.
  - **After download** — The installer does not stop the IIS web server during downloading of the files. After the files are completely downloaded, the installer stops the web server, installs the files, and then restarts the IIS web server.

**Caution:**

These settings are important especially when updating Exact Synergy Enterprise or installing on a server that is already serving other IIS web sites. On a slow internet connection, select **After download** to minimize web service disruption.

9. Click **OK** and wait while the installer downloads the list of files and calculates the disk space requirement.



10. When prompted, click **Yes** to continue installation.
11. Wait while Exact Synergy Enterprise is being downloaded and installed. The time it takes to download and install depends on the speed of your Internet connection. You can click **Cancel** to abort the installation but this is not recommended as the partial installation cannot be rolled back. Once completed, the installer will ask whether you want to start Exact Synergy Enterprise.

12. Click **Yes** to start Exact Synergy Enterprise and begin creating the database. Take note that clicking **Yes** will open Exact Synergy Enterprise in Microsoft Edge using normal HTTP protocol. If your server allows only HTTPS connection or you want to start Exact Synergy Enterprise using HTTPS, click **No** instead and open it manually.

**Caution:**

If the current Windows user account is not the designated Exact Synergy Enterprise administrator, click **No**. Although you can start Exact Synergy Enterprise to specify the license and create the database, the database initialization will fail and the newly created database will be unusable.

**Note:**

Loading Exact Synergy Enterprise for the first time takes longer than usual. This is normal.

13. You can proceed to the next step by creating the database as described at 3.2 *Initializing Exact Synergy Enterprise*.

## 3.2 INITIALIZING EXACT SYNERGY ENTERPRISE

The Exact Synergy Enterprise installer creates a virtual directory called **Synergy** in the Microsoft Internet Information Services (IIS) web server. You can open Exact Synergy Enterprise by browsing to this virtual directory. For example, if your server address is *https://deltabike.com*, you can open Exact Synergy Enterprise by browsing to *https://deltabike.com/synergy*.

### Caution:

Before accessing Exact Synergy Enterprise for the first time to create a database or open an existing one, make sure that the user account currently logged on to Microsoft Windows is the designated Exact Synergy Enterprise administrator. Otherwise, the database initialization will fail.

### 3.2.1 Specifying valid Exact Synergy Enterprise licenses

The first time Exact Synergy Enterprise is started, you are required to provide a valid license. For customers upgrading from Exact Synergy, the license is no longer valid. You can download your Exact Synergy Enterprise license from *https://customers.exact.com*.

#### To provide valid Exact Synergy Enterprise licenses:

1. If you have clicked **Yes** when prompted by the Exact Synergy Enterprise installer after completing the installation, Microsoft Edge will start with Exact Synergy Enterprise. Otherwise, you can start Microsoft Edge and browse to the Exact Synergy Enterprise portal.

### Caution:

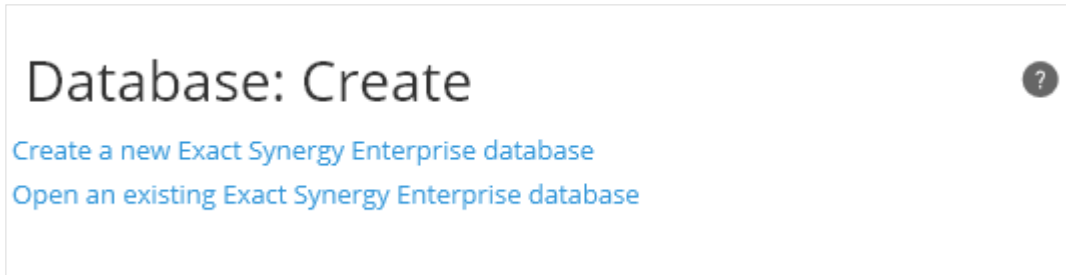
If you are starting Exact Synergy Enterprise from the web server it is installed on and the web server is configured for HTTPS connection, avoid using *https://localhost/synergy*. Instead, use the complete domain name as issued in the server certificate to avoid certificate error.

2. Click **Browse** and select the license file. The license file has an ELC file name extension.
3. Click **Continue**.

After providing a valid license, you can proceed to create a database or open an existing database.

### 3.2.2 Creating Exact Synergy Enterprise databases

After providing the license file, the **Database: Create** page will be displayed. You can either create a database or open an existing database.



To create Exact Synergy Enterprise databases:

1. On the **Database: Create** page, click **Create a new Exact Synergy Enterprise database**.

2. Under the **Database** section, type the name of the database server at **Server**.
3. Type the name of the database at **Database**. This cannot be edited once the database is created.

#### Caution:

If the database name is not “Synergy”, a virtual directory will be created in the IIS web server with the entered name. Exact Synergy Enterprise can then be accessed at this virtual directory. For example, if the name is “deltabike”, Exact Synergy Enterprise can be accessed at <https://deltabike.com/deltabike>. Therefore, it is advisable for first time users to use “Synergy” as the database name.

4. Select the collation for your database at **Collation**. You have the option to use the local collation by selecting **Server default** or the international collation by selecting **International (Latin1\_General\_CI\_AS)**.



- At **Directory**, type the full path to the folder where you want the SQL database to be stored. If you leave this blank, Exact Synergy Enterprise will create the SQL database in the default Microsoft SQL Server data folder, which is usually “C:\Program Files\Microsoft SQL Server\MSSQL10\_50.SQL2008R2\MSSQL\Data”.

**Caution:**

The folder specified at **Directory** must exist or Exact Synergy Enterprise will display an error message. If the folder does not exist in the system, you will need to create it before clicking **Create**.

- Select the **Default** check box to make this the default database. When you log into Exact Synergy Enterprise, this is the database that will be used by default.
- Under the **Administrator** section, type the Windows login name, full name, and ID of the Exact Synergy Enterprise administrator at **User name**, **Full name**, and **ID** respectively.

**Caution:**

The **User name** must be the same as the login name of the user who is currently logged on to Microsoft Windows or the database initialization will fail. Due to this, ensure that the Exact Synergy Enterprise administrator is the current user logged on to Microsoft Windows before creating the database.

**Note:**

The ID of users created subsequently will progress from this number. For example, if the ID of the administrator is “1”, the ID of the next user created will be “2”.

- Under the **Login** section, define the authentication method to log into the Microsoft SQL Server in order to create the database. If the current Microsoft Windows login has administrative rights to the database server and you want to use the **Windows Authentication** method, select the **Integrated security** check box. Otherwise, clear the check box and type the Microsoft SQL administrator login name and password at **Login name** and **Password** respectively.
- Under the **Division** section, type the company code (up to three digits) and name for the first company to be created in the database at **Code** and **Name** respectively.

**Note:**

This section is disabled if the **Demo company** check box under the **Database** section is selected.

- Under the **Settings** section, select the country this new database at **Country**.

**Note:**

The **Country** box will be disabled if the **Demo company** check box under the **Database** section has been selected.

11. Select the settings for the account code, debtor code, and creditor code at **Account code**, **Customer code** (or **Debtor code**), and **Vendor code** (or **Creditor code**) respectively:
  - **Numerical** — Select this option to use only numbers as account, debtor, or creditor codes.
  - **Alphanumerical** — Select this option to allow both numbers and letters for the codes.

**Caution:**

The default option for each code setting is **Numerical**. Do not select the **Alphanumerical** option for any of the code setting if there will be data replication with the back-office system. These settings cannot be changed after the database is created.

12. Click **Create** and wait while Exact Synergy Enterprise creates the database. After the database is created, the Exact Synergy Enterprise environment is loaded.

**Note:**

All fields with the “!” icon are mandatory.

### 3.2.3 Opening an existing Exact Synergy Enterprise database

If you have an existing Exact Synergy database, you can open the database in the newly installed system after providing the license file. Exact Synergy Enterprise will automatically update the database as required.

**Caution:**

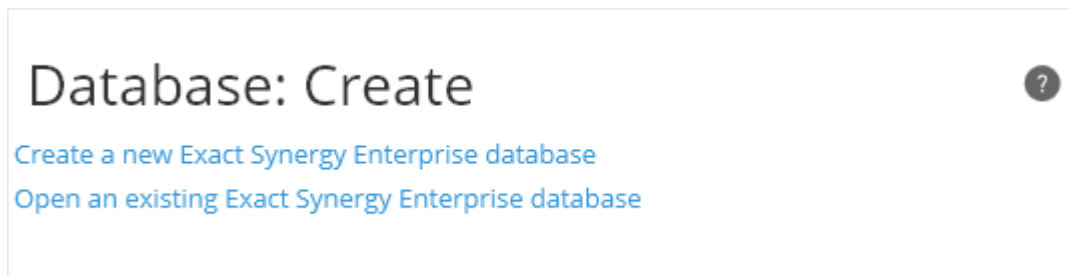
If the database that you are opening was created in Exact Synergy Enterprise, it is highly recommended that you read the document titled **Exact Synergy Enterprise: Database Conversion Manual** in order to convert the database correctly to Exact Synergy Enterprise.

**Note:**

A file named **db.config** is used by Exact Synergy Enterprise to store information about the different Exact Synergy Enterprise database portals. This file is automatically created in the folder where Exact Synergy Enterprise is installed after creating or opening a database.

**To open an existing Exact Synergy Enterprise database:**

1. On the **Database: Create** page, click **Open an existing Exact Synergy Enterprise database**.



2. Under the **Database** section, type the name of the database server at **Server**.
3. Type the SQL name of the existing database at **Database**.

**Tip:**

The database will be attached automatically to the virtual directory where the initialization page is accessed. For example, you can create a **dbike** virtual directory in IIS and allow scripts to be executed in the virtual directory. Then, open Microsoft Edge and browse to the virtual directory, for example, <https://deltabike.com/dbike>. After providing the license and opening the database, Exact Synergy Enterprise automatically assigns the database to this directory. If you are creating several virtual directories and using the same database for these directories, remember to restart the IIS web server. An alternative method is to edit the **db.config** file manually where you do not need to restart the IIS web server. For more information on the **db.config** file, see [3.2.4 Manually editing the database configuration file](#).

4. Under the **Login** section, define the authentication method to log into the Microsoft SQL Server in order to open the database. If you are the database administrator and you want to use the **Windows Authentication** method, select the **Integrated security** check box. Otherwise, clear the check box and type the Microsoft SQL administrator login name and password at **Login name** and **Password** respectively.

5. Click **Open** and wait while Exact Synergy Enterprise opens the database and updates the database if required. After the database is opened, the Exact Synergy Enterprise environment will be loaded.

**Database: Open** ☆ ?

**Database**

DBMS  SQL Server

Server

Database  ⚠

**Login**

Integrated security  MACBEAN/hu

Login name

Password

**Licence**

File (.elc) C:\Project\License\scp2.elc

**Caution:**

In order to avoid any errors, ensure that you are an existing employee in the Exact Synergy Enterprise database.

**Note:**

All fields with the “!” icon are mandatory.

### 3.2.4 Manually editing the database configuration file

The database configuration is stored in the **db.config** file in the root of the folder where Exact Synergy Enterprise is installed. This file is created when a database is created or an existing database is opened.

**Tip:**

In Exact Synergy, the database configuration was named **baco.cfg**.

You can manually edit this file to assign a database in Exact Synergy Enterprise to a virtual directory. Although this is done automatically when you open a database, you might want to edit this file manually in certain situations:

- You want to attach the database to several virtual directories but you want to avoid restarting the IIS web server.
- You want to configure a different IIS web server machine in a multi-server setup to access the same database but using a different virtual directory name.
- The file is missing or corrupted.

The **db.config** file is a plain text file. Therefore, you can edit or create the file using a plain text editor, such as Microsoft Notepad.

The following is a sample of the **db.config** file:

```
<?xml version="1.0" encoding="utf-8"?>
<databases>
  <database virtualdirectory="synergy">
    <database>synergydb</database>
    <server>sql.deltabike.com</server>
  </database>
  <database virtualdirectory="deltabike">
    <database>deltabike</database>
    <server>data.deltabike.com</server>
  </database>
  <database virtualdirectory="dbike">
    <database>deltabike</database>
    <server>data.deltabike.com</server>
  </database>
</databases>
```

**Caution:**

It is recommended that you back up the **db.config** file before making any changes. Either rename the backup file, such as **db (original).config** or store the backup file in another different folder.

In this file, you can attach the database to other IIS virtual directories or web sites.

**To attach virtual directories to the db.config file:**

1. Open the **db.config** file.
2. Add the following codes before the `</databases>` tag:

```
<database virtualdirectory="virtual_directory_name">
  <database>sql_database_name</database>
  <server>sql_server_address</server>
</database>
```

3. Replace **virtual\_directory\_name**, **sql\_database\_name**, and **sql\_server\_address** with the appropriate values. For more information on creating virtual directories, see *3.3.4 Creating web sites and virtual directories in IIS*.
4. Save the **db.config** file. If the virtual directory is able to run properly, you may then proceed with deleting the backup file.

**Caution:**

Make sure that the IIS virtual directory is created with scripts that are allowed to be executed. You can then browse to the virtual directory and access Exact Synergy Enterprise as long as you are a valid employee that is not blocked in the database.

In case you are configuring a new web server in a multi-server setup, copy the **db.config** file from the existing server to the new server and make changes as necessary. You can also recreate the **db.config** file if it is missing or corrupted, such as when installing Exact Synergy Enterprise in a new IIS web server after the existing server failed.

**To attach web sites to the db.config file:**

You can also use the same principles described in the procedures above to attach web sites to the **db.config** file by adding the following codes before the `<databases>` tag:

```
<database website="host_name">
  <database>sql_database_name</database>
  <server>sql_server_address</server>
</database>
```

Replace **host\_name**, **sql\_database\_name**, and **sql\_server\_address** with the appropriate values. For more information on creating web sites, see *3.3.4 Creating web sites and virtual directories in IIS*.

### 3.3 SETTING UP EXACT SYNERGY ENTERPRISE PORTALS

A business organization generally allows a particular category of people to access specific business information and processes. Exact Synergy Enterprise provides such control by having different portals for different categories of people.

#### 3.3.1 Portal types in Exact Synergy Enterprise

There are five types of portals in Exact Synergy Enterprise:

- **Web Portal**
- **Customer Portal**
- **Reseller Portal**
- **Supplier Portal**
- **Employee Portal**

The **Web Portal** is an anonymous portal meant for the general public and is accessible by anyone on the World Wide Web. The other portals are authenticated portals where only customers, resellers, suppliers, and employees of the company who are allowed to access can log in with their user names and passwords. You can also create custom portals for all portal types.

### 3.3.2 Portal accesses and authentications

In order to enable proper authentication for the portals, Exact Synergy Enterprise uses **Windows Authentication**. Exact Synergy Enterprise determines the type of portals to load and access to grant to the user based on this authentication.

#### Accessing the anonymous Web Portal

Exact Synergy Enterprise allows you to create several web sites for the **Web Portal** and assign each web site to a domain name. Whenever an anonymous user accesses one of these domain names, the **Web Portal** will display the associated web site.

Since the **Web Portal** does not require any user authentication, a specific Windows user account is not necessary. The IIS web server assigns the Internet Guest Account (IUSR\_<domain>) to the user.

When a user accesses Exact Synergy Enterprise, **Default.aspx** redirects the user to **Portal.aspx**. When **Portal.aspx** detects that the user account is an Internet Guest Account, **Portal.aspx** displays a public news page.

**Tip:**

You can create custom web sites for the **Web Portal** in Exact Synergy Enterprise at Modules → Documents → Setup → Maintenance → Web sites.

If you want the anonymous portal to load custom web sites, you will need to create a special redirector page pointing the user to **SysWebSite.aspx**. This is described at 3.3.5 *Configuring anonymous portal*. Based on the domain name used to access the **Web Portal**, **SysWebSite.aspx** displays the proper web site to the user.

#### Accessing the authenticated portals

The authenticated portals require each user to have a Windows user account in the designated domain. The users must authenticate themselves with their user names and passwords before they are granted access by Exact Synergy Enterprise to these portals.

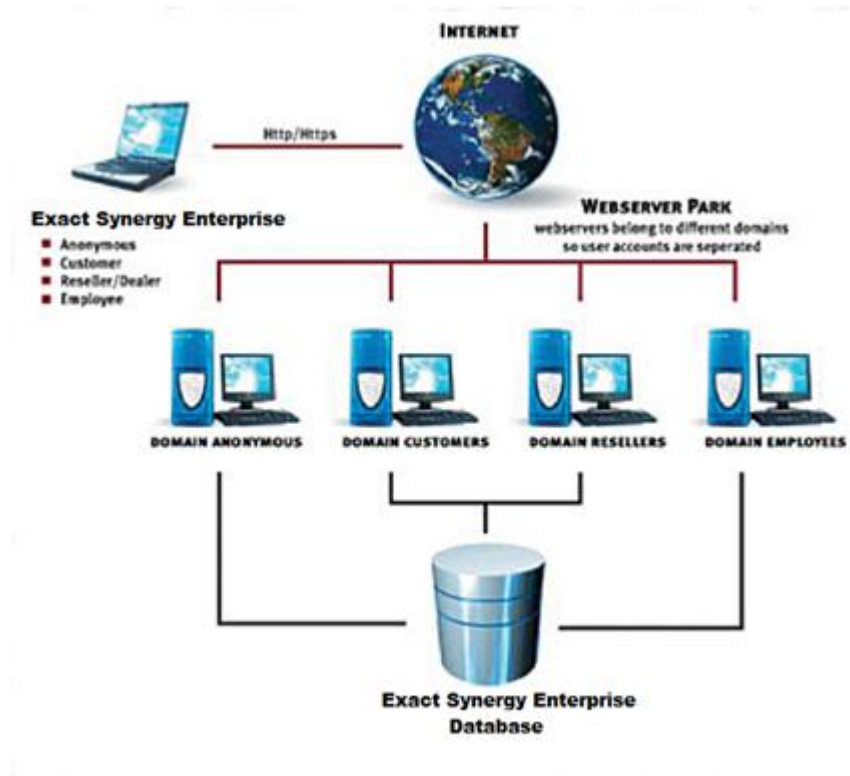
When a user visits an authenticated Exact Synergy Enterprise portal, the IIS web server verifies the user name and password against a Windows user accounts before allowing access to **Default.aspx**. Then, **Default.aspx** redirects the user to **Portal.aspx**.

Based on the authenticated user name, **Portal.aspx** determines automatically the type of portal to present to the user. For example, when a customer logs in to Exact Synergy Enterprise, the **Customer Portal** is loaded for the customer.



### 3.3.3 Segregating user accounts by types

In an Exact Synergy Enterprise implementation with a large number of users, it is recommended that you segregate the user accounts in separate domains based on user types. These user accounts can be segregated either by using different domains or Microsoft Windows Active Directory containers.



Different user types in different domains accessing the same database

### Prerequisites to segregating user accounts based on types

The following configuration must be in place to allow Exact Synergy Enterprise to manage the Windows user accounts:

- The domains or Active Directory containers for each authenticated portal type must be configured under the **Server** section of Modules → HRM → General → Settings in Exact Synergy Enterprise.
- The **Exact.Jobs.SysMaint** background job must be set up and running properly in the application server. For more details, see *Chapter 5 Background Jobs Configuration*.

#### Caution:

Incorrect set up of the **Exact.Jobs.SysMaint** background job can cause improper additions or deletions of Windows user accounts in the domain.

### 3.3.4 Creating web sites and virtual directories in IIS

The Exact Synergy Enterprise installer creates a virtual directory called **Synergy** in the **Default Web Site** in the IIS web server. You can further create other web sites or virtual directories for setting up anonymous and authenticated portals for Exact Synergy Enterprise.

In order to set up Exact Synergy Enterprise portals, web sites or virtual directories must be created in the IIS web server. The following summarizes some aspects of web sites and virtual directories:

- A web site can be linked to many IP addresses where each IP address is assigned to a different Local Area Network (LAN) interface in the web server.
- A single IP address can be linked to several web sites where each web site is assigned a different Domain Name System (DNS) name.
- A DNS name can be assigned as a host header to receive the network traffic to the web site when an IP address is used for multiple web sites in a web server.
- Virtual directories are just components of a web site and thus, do not have addresses or DNS names.
- Multiple virtual directories can be created in one web site and this is useful in setting up different portals.
- The name of each virtual directory has to be unique within one web site.

#### To create Exact Synergy Enterprise web sites:

1. Go to Start → Control Panel → Administrative Tools → Internet Information Services (IIS) Manager.
2. In the left pane, expand the server node.

- Right-click **Sites** and select **Add Website....** The **Add Website** page will be displayed. Define the required fields as follows, and then click **OK**:

The screenshot shows the 'Add Website' dialog box with the following configuration:

- Site name:** dbike
- Application pool:** dbike
- Content Directory:**
  - Physical path:** c:\Synergy
  - Pass-through authentication:** Connect as... Test Settings...
- Binding:**
  - Type:** http
  - IP address:** 10.128.48.116
  - Port:** 80
  - Host name:** www.dbike.com
  - Example: www.contoso.com or marketing.contoso.com
- Start Website immediately

- **Site name** — Type a name for your web site.
- **Application pool** — Click **Select...** to select the application pool associated to the web sites.  
Content Directory section:
  - **Physical path** — Type the relevant path or browse to select the path of the web sites.
  - **Pass-through authentication** — To enable proper authentication for the web sites, click **Connect as** and select the option **Specific user:** to allow users with specific credentials to access the path. Otherwise select the option **Application user (pass-thru authentication).**
  - **Test Settings** — Click this to verify the settings specified for the content directory.

- **Binding** section:
  - **Type** — Select the type of protocol applicable to the web site.
  - **IP address** — Define the IP address assigned to the web sites. Leave it as it is when only one web site is created.
  - **Port** — Type the TCP ports assigned to the web sites.
  - **Host name** — Type the host header name for the web sites sharing specific IP address with several DNS names.

**Usage example:**

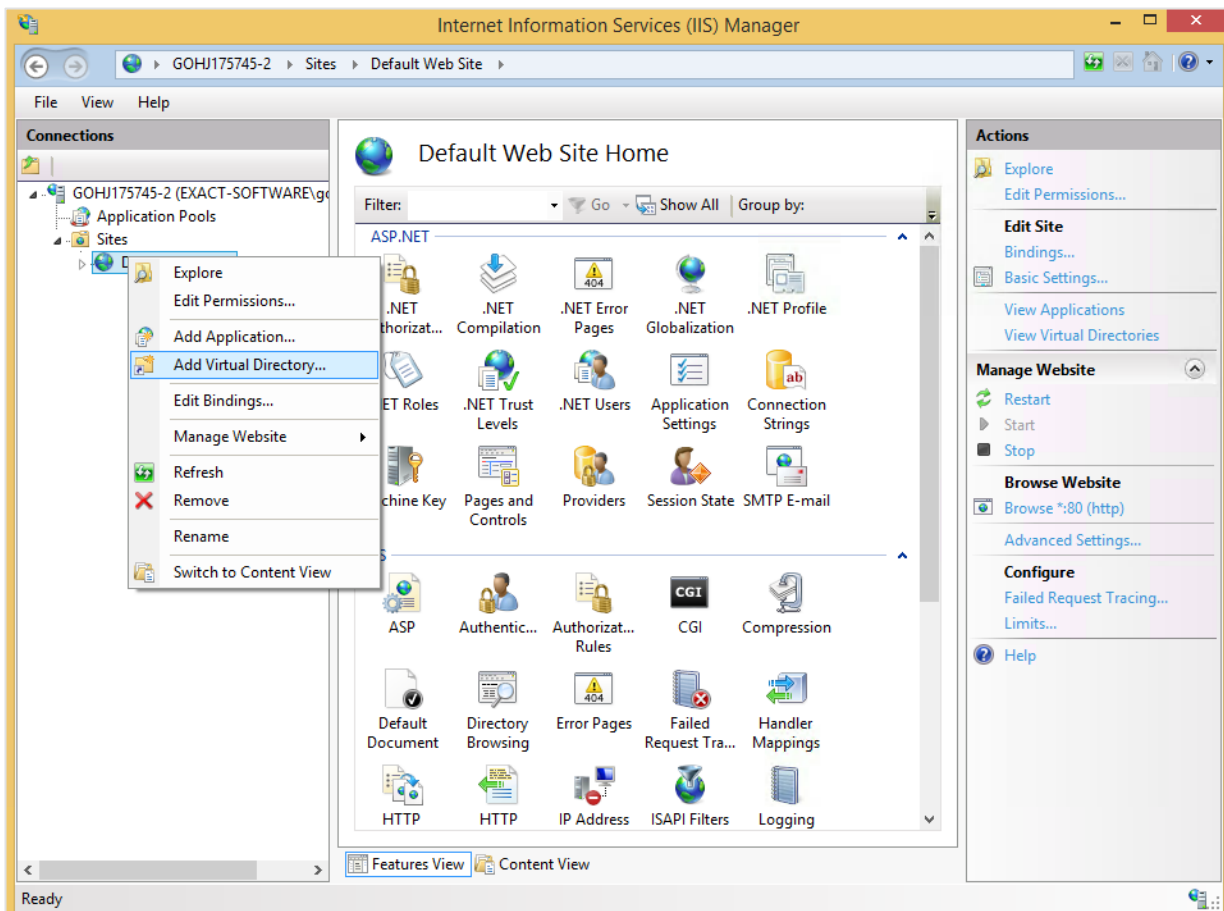
For example, you have two web sites with DNS names `customers.deltabike.com` and `www.deltabike.com`. These web sites are hosted in the same web server and share the same IP address.

In a particular instance, a user requests the URL `http://www.deltabike.com`. DNS servers on the Internet resolve the IP address of this DNS name and the user is directed to your web server. Since there are two web sites on the IIS web server sharing the same IP address and TCP port, the web server needs to decide which of these two web sites to show to the user.

By matching the DNS name requested in the URL to the host header name, the IIS web server displays the web site where `www.deltabike.com` is specified as the host header.

**To create Exact Synergy Enterprise virtual directories:**

1. Go to Start → Control Panel → Administrative Tools → Internet Information Services (IIS) Manager.
2. In the left pane, expand the server node and click **Sites** to expand it.
3. Right-click Default Web Site and select Add Virtual Directory....



4. In the **Add Virtual Directory** screen, type the virtual directory name at **Alias**. This alias will be the address of the Exact Synergy Enterprise virtual directory.

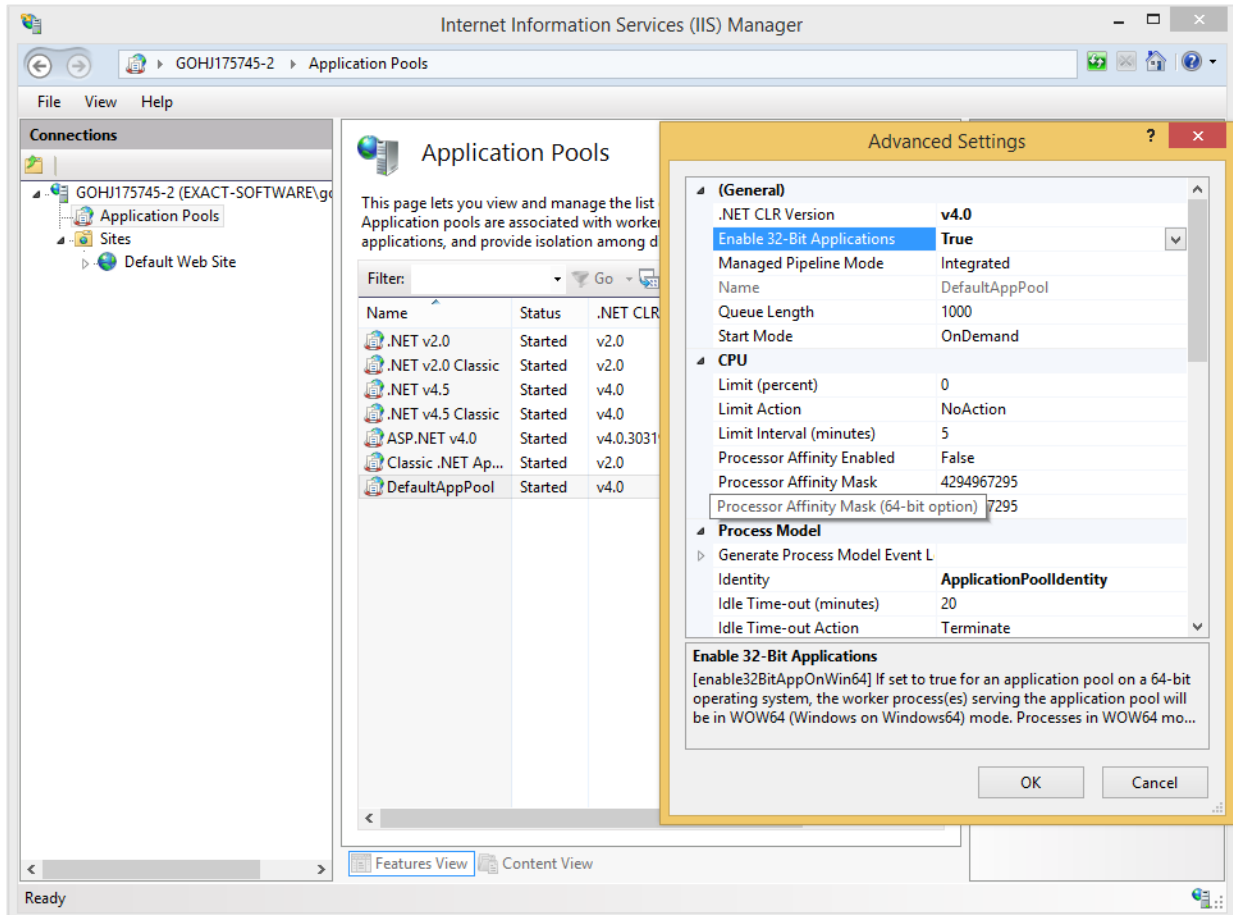
The screenshot shows the 'Add Virtual Directory' dialog box. The title bar contains a question mark and a close button. The main area contains the following fields and controls:

- Site name:** Default Web Site
- Path:** /
- Alias:** dbike
- Example:** images
- Physical path:** c:\Synergy (with a browse button (...))
- Pass-through authentication:** Connect as... and Test Settings... buttons
- OK** and **Cancel** buttons at the bottom.

5. At **Physical path**, type a full path or browse for the full path to the folder.
6. Click **Connect as** and select the option **Specific user**: which requires specific credentials to access the path. Otherwise select the option **Application user (pass-thru authentication)** in the **Connect As** screen. To verify the settings specified for the virtual directory, click **Test Settings**.
7. Click **OK**.

### To enable 32-bit applications on a 64-bit system with Exact Synergy Enterprise:

1. Go to Start → Control Panel → Administrative Tools → Internet Information Services (IIS) Manager.
2. In the left pane, expand the server node and click **Application Pools**.
3. On the **Application Pools** pane, right-click required application pool and select **Advanced Settings...**
4. At **Enable 32-bit Applications**, select **True**, and then click OK.



After the web site or virtual directory is created, you need to configure the web site for anonymous or authenticated access, depending on the type of portal you are assigning to the web site or virtual directory.

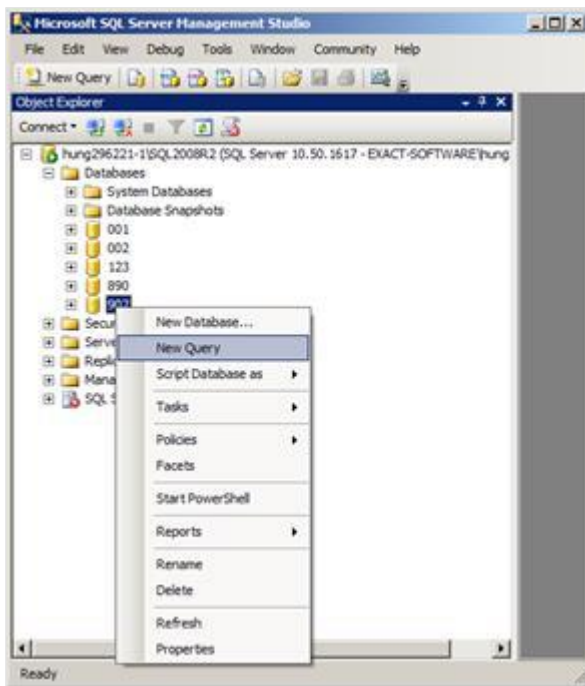
### 3.3.5 Configuring anonymous portals

For the anonymous **Web Portal**, you will need to observe several requirements:

- Before anonymous users can access the **Web Portal**, you need to create the **ExactWebGuest** special account in Exact Synergy Enterprise.
- If you plan to redirect the anonymous users to a custom web site, you will need to create a custom redirector file.
- The web site or virtual directory must be properly configured and must allow anonymous access.

**To create Exact Web Guest special accounts:**

1. Go to the **Start** menu and click **Run**. At **Open**, type **SqlWb.exe** and click **OK**.
2. In the **Connect to Server** screen, define the relevant information and click **Connect**.
3. Double-click the Microsoft SQL Server node containing the Exact Synergy Enterprise database, and then double-click **Databases**. Then, right-click the Exact Synergy Enterprise database branch and click **New Query**.



4. In the query area in the right-pane, type the following query, replacing **<country\_code>** and **<division\_code>** with the proper values according to your requirements:

```
insert into
  humres (res_id, fullname, sur_name, usr_id, job_level,
  blocked,land_iso,ldateindienst,repto_id,comp,emp_type,
  emp_statd,emp_stat, UserLicenseType)
  values(-2,'ExactwebGuest','ExactwebGuest','ExactwebGuest',
  0,0,'ES',getdate(), 1,'001 ','E',getdate(),'A',100)

insert into
  HRRoles (ID,RoleID,EmpID,RoleLevel) values (NewID(),92,-2,3)
```

5. Then, click the **Query** menu and select **Execute**. If the **ExactWebGuest** account is not available yet, it will be created. Otherwise, an error message telling you that you cannot insert a duplicate key row will be displayed. In this case, the **ExactWebGuest** account already exists.
6. Close Microsoft SQL Server Management Studio.



**To create custom redirector files:**

1. Using Windows Explorer, browse to the folder where Exact Synergy Enterprise is installed.
2. Right-click the **Default.aspx** file and select **Copy**.
3. Right-click a blank space in the folder and select **Paste**. You will see the **Copy of Default.aspx file**.
4. Right-click the **Copy of Default.aspx** file and select **Rename**. Then, type a valid file name, such as **webdefault.aspx** and press the ENTER key. For clarity, the file will be referred to as **webdefault.aspx** onwards.

**Tip:**

If you do not see the **.aspx** file extension, you must first clear the **Hide extensions for known file types** check box under the **Advanced settings** section in the **View** tab of **Folder Options**. You can access **Folder Options** by selecting **Folder Options** from the **Tools** menu of Windows Explorer.

5. Then, right-click the **webdefault.aspx** file and select **Edit**. Microsoft Notepad will open the file for editing.



```

webdefault.aspx - Notepad
File Edit Format View Help
<%@ Page language="vb" inherits="System.Web.UI.Page" %>
<%@ Import namespace="Exact.web.UI.Page" %>
<script runat="server">
    Sub Page_Load()
        Dim c As Client = Base.GetClientType(System.Web.HttpContext.Current)
        If (c And Client.Mobile) > 0 Then
            Response.Redirect("mobile/Default.aspx")
        Else
            Response.Redirect("docs/SysWebsite.aspx")
        End If
    End Sub
</script>
<html>
<head>
    <meta runat="server" id="description" name="description" visible="False"/>
    <meta runat="server" id="keywords" name="keywords" visible="False"/>
    <title runat="server" id="title"/>
</head>
<body>
</body>
</html>

```

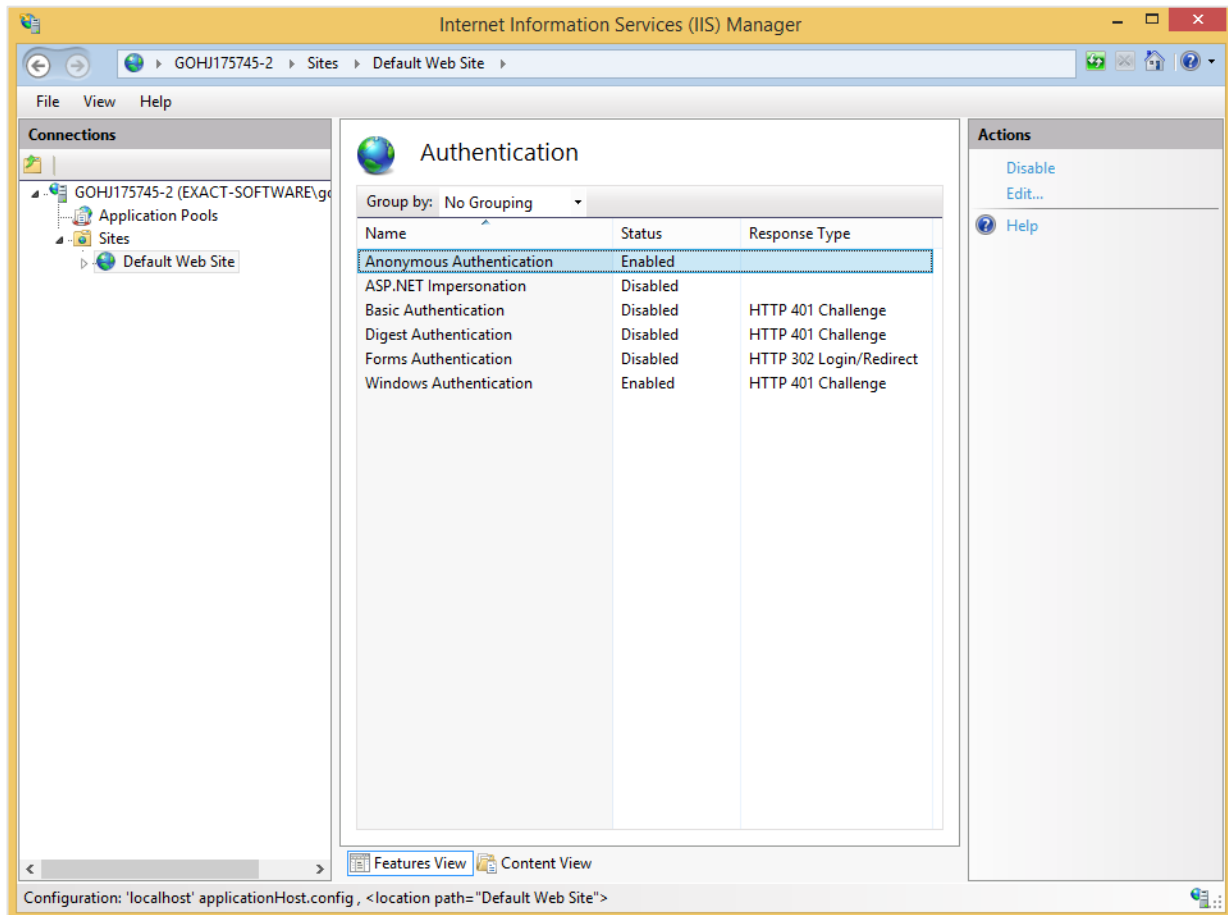
6. In the line that says **Response.Redirect("docs/Portal.aspx")**, change the code **Portal.aspx** to **SysWebsite.aspx**.
7. Click the **File** menu, select **Save**, and then close Microsoft Notepad.

### To configure web sites as anonymous web portals:

**Tip:**

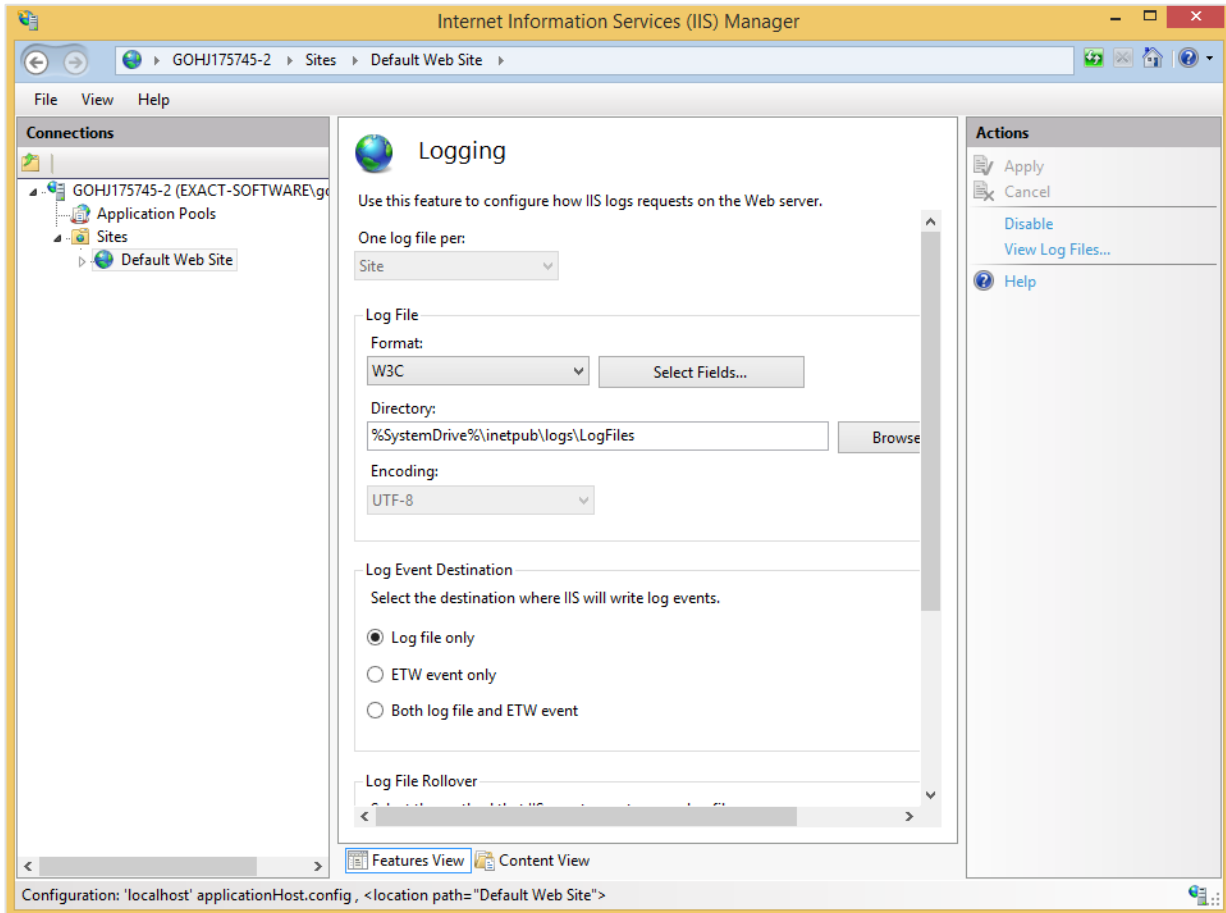
You can use the same principles described in this procedure to also configure an Exact Synergy Enterprise virtual directory for anonymous access.

1. Go to Start → Control Panel → Administrative Tools → Internet Information Services (IIS) Manager.
2. To configure the **Authentication** feature, expand the server node and **Sites** in the left pane.
3. Click the site for which you want to enable **Windows Authentication**.
4. In **Features View**, double-click **Authentication** under the **IIS** section.
5. In the **Authentication** pane, right-click **Anonymous Authentication** and select **Enable**. Disable the rest of the authentication methods as follows:



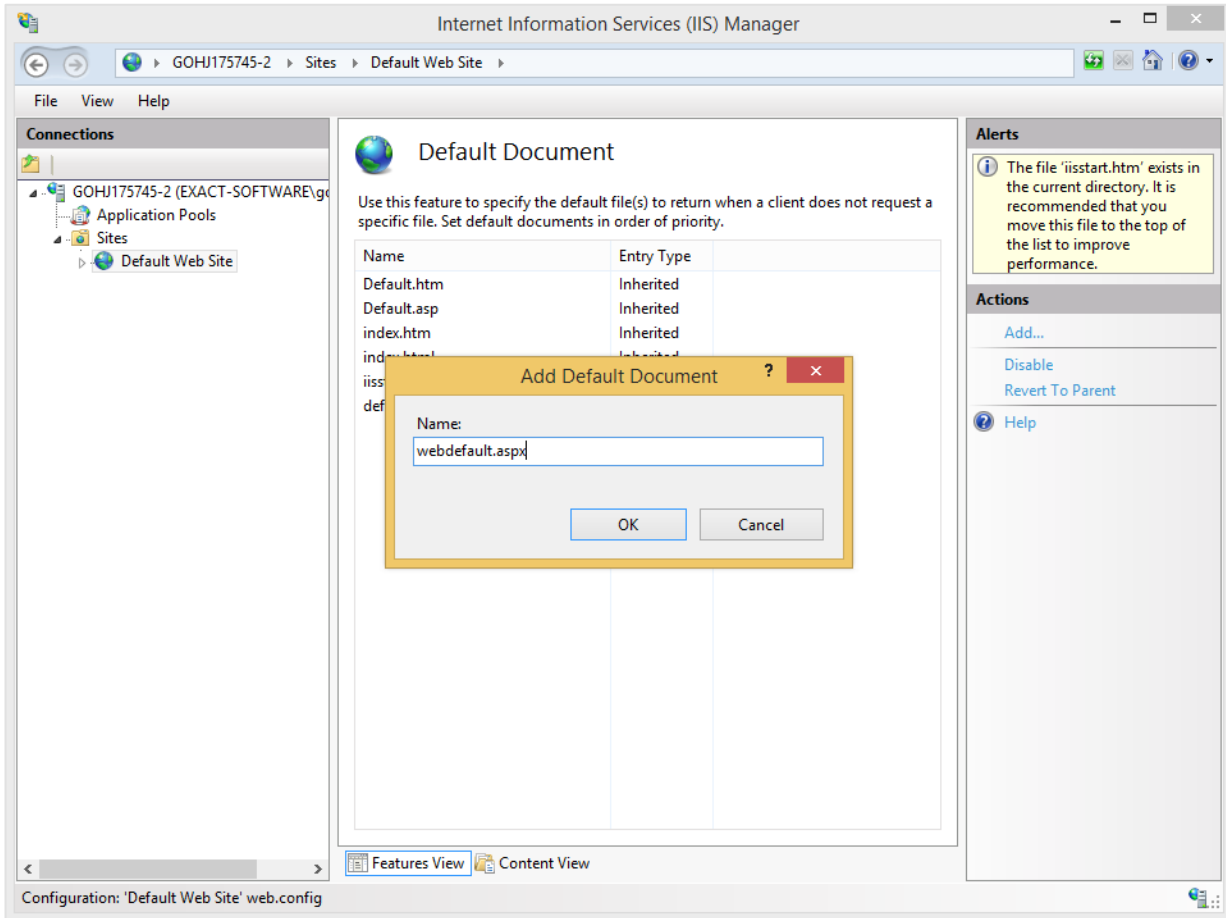
6. To configure the **Logging** feature:
7. In the left pane, expand the server node, expand **Sites**, and then select the required site in the left pane.
8. In **Features View**, double-click **Logging** under the **IIS** section.
9. In the **Logging** pane, select **W3C** at **Format:** under the **Log File** section. Type or browse the path where you want to store the log file at **Directory**.

10. Under the **Log File Rollover** section, select **Daily** at **Schedule** for the IIS to create a log file, and then select **Apply** in the **Actions** pane.

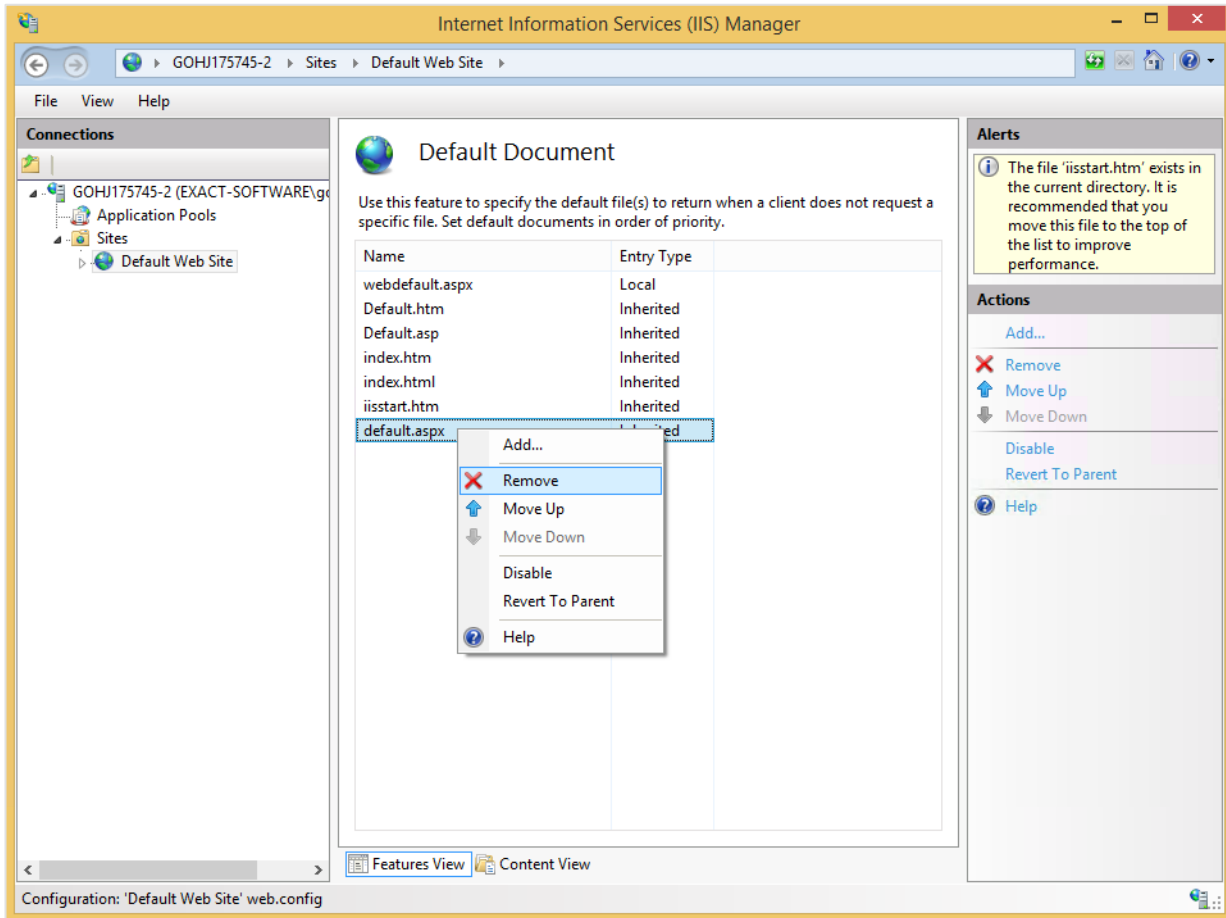


11. To configure **Default Document** feature, click the required site in the left pane.  
 12. In **Features View**, double-click **Default Document** under the **IIS** section.

13. In the **Default Document** pane, in the **Actions** pane, click **Add...** and type **webdefault.aspx** (or the name you gave to the file created in the previous procedure). Click **OK**.



14. Remove all other entries in the box by clicking **Remove** after selecting each entry. Select **Yes** when prompted to remove the selected default document.



Once you have configured the proper custom web sites in Exact Synergy Enterprise, whenever a public user browses to this web site, **SysWebSite.aspx** will load and present the user with the proper web site.

### 3.3.6 Configuring authenticated portals

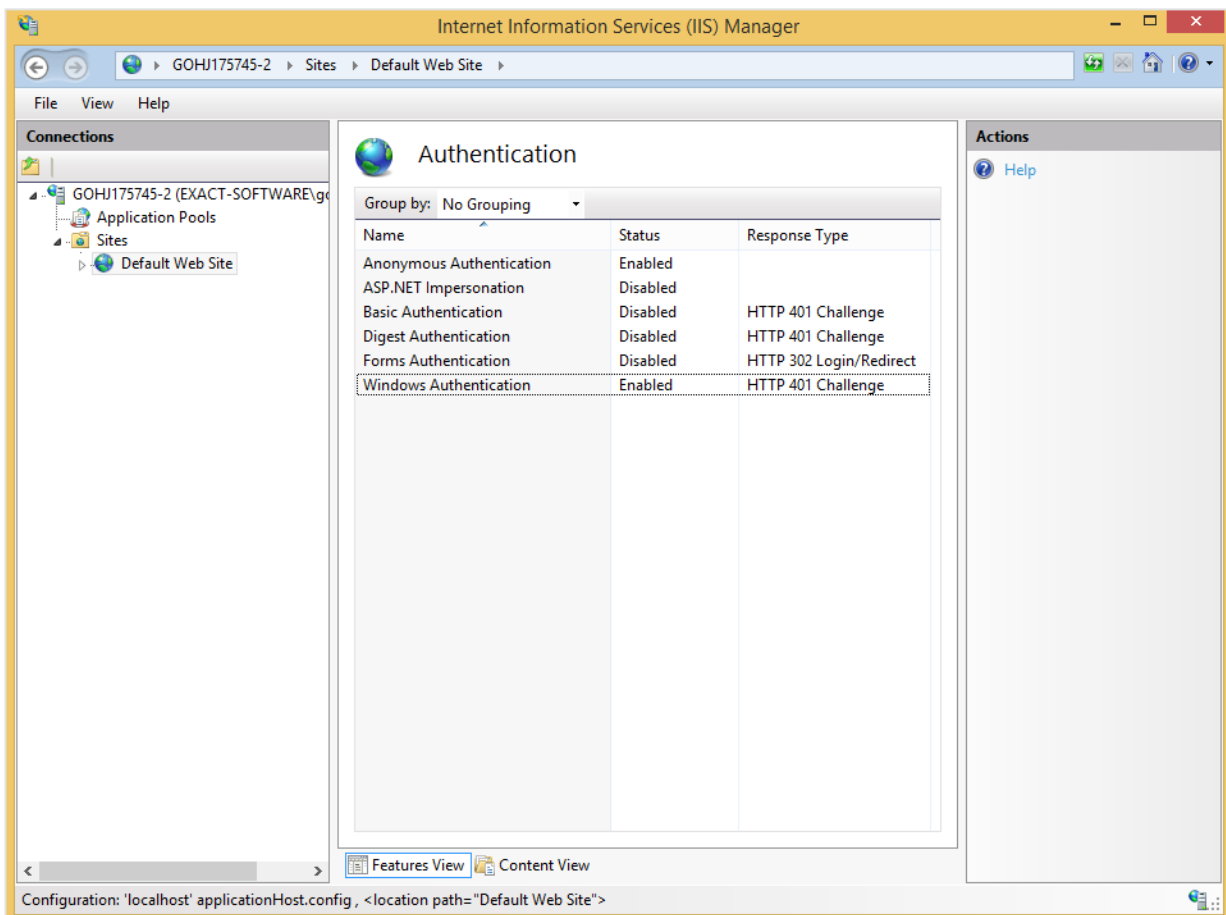
For authenticated portals, apart from configuring the web sites or virtual directories, you will also need to set the appropriate portal settings under the **Server** section via Modules → Customers → Setup → Other → Settings in Exact Synergy Enterprise.

**To configure web sites as authenticated portals using Windows Authentication method:**

**Tip:**

You can use the same principles described in this procedure to also configure an Exact Synergy Enterprise virtual directory for authenticated access.

1. Go to Start → Control Panel → Administrative Tools → Internet Information Services (IIS) Manager.
2. Expand the server node and Sites in the left pane and click the required site.
3. In **Features View**, double-click **Authentication** under the **IIS** section.
4. In the **Authentication** pane, right-click **Windows Authentication** and select **Enable**. Disable the rest of the authentication methods as follows:



To configure the **Logging** and **Default Document** features on authenticated portals, see 3.3.5 *Configuring anonymous portals*.

When a user browses to this web site, the user will be authenticated either through **Windows Authentication** or **Basic Authentication**. The user will then be directed to the **SysWebSite.aspx** file. **SysWebSite.aspx** will then present the appropriate portal to the user based on the user authentication.

**Caution:**

Remember to set the appropriate portal settings under the **Server** section via Modules → Customers → Setup → Other → Settings in Exact Synergy Enterprise so that authenticated users are directed to the correct portals.

**Note:**

You can also redirect users to a login page for authentication using **Forms Authentication**. To do so, disable **Windows Authentication** and/or **Basic Authentication** before enabling **Forms Authentication**.

## 4. INITIAL COMPANY CONFIGURATION

This chapter describes the setting up of a company in Exact Synergy Enterprise after a database has been created. The procedures involve tasks to be performed in various menu paths where the necessary settings in different modules can be defined and customized.

**Note:**

The specific settings for each installation depend on the company's needs. Exact Synergy Enterprise has to be implemented with a complete planned approach with clear goals and means of achieving these goals during the implementation phase. For more information, see *Chapter 1 Approach to Project Implementation*.



## 4.1 GENERAL SETTINGS

General settings affect the general functioning of Exact Synergy Enterprise. They form the bases of all settings in the software, and hence must be set up first. The following page shows the information of the general settings already defined when you set up a company in Exact Synergy Enterprise. You can view the information by going to the **General** section via Modules → System → Setup → Database → Set up company.

### Financial: Settings

📄 ☆ ?

✕ Close
Save

---

**General**

Main holding division:  ✕ [MacBean CoffeeWorld](#)

Country:  [Netherlands](#)

Currency: [EUR — Euro](#)

Check closed periods:  ▼

---

**General ledger links**

Calculation differences:  [🔍](#)

Euro calculation difference:  [🔍](#)

---

**Export: G/L Account**

Classification:  ▼

Sub-classification:  ▼

---

**Import**

Reopen: Periods (Automatically)

Show alert for:  ▼ Days

Document: Type:  ▼

---

**Import: Check**

Document: Deletion date:  ▼

### General section

#### Financial

Click the **Check** hyperlink in the **Value** column and you will see the **Financial: Settings** page where you can define important financial settings. For more information, see *4.1.1 Defining general financial settings*.

#### Countries

The number displayed in the **Value** column indicates the number of active countries in the system. Click the number hyperlink and you will see the **System: Countries** page where you can display an overview of the countries and activate or deactivate the countries.

### Currencies

The number displayed in the **Value** column indicates the number of active currencies in the system. You need to activate the currencies before you can use the currencies. Click the number hyperlink and you will see the **Currencies** page where you can display an overview of the currencies and activate the currencies that you want to use in the system. For more information, see *4.1.5 Activating currencies*.

### Divisions: Groups

The number displayed in the **Value** column indicates the number of available division group layouts in the system. Click the number hyperlink and you will see the **HRM: Groups** page where you can define the different division group layouts. The layouts are important as you can use different layouts to display your division groups and divisions in your organization chart. For more information, see *4.1.11 Setting up organization structure*.

### Create: Division

The number displayed in the **Value** column indicates the number of divisions which have been created in the system. Click the number hyperlink and you will see the **HRM: Divisions** page where you can see the overview of divisions and create divisions. For more information, see *4.1.12 Creating divisions*.

### Categories: Cost centres

The number displayed in the **Value** column indicates the number of available cost center group layouts in the system. Click the number hyperlink and you will see the **HRM: Cost centre groups** page where you can define the different cost center group layouts. For more information, see *4.1.13 Defining cost center group layouts and subgroups*.

### Create: Cost centre




The number displayed in the **Value** column indicates the number of cost centers which have been created in the system. Click the number hyperlink and you will see the **HRM: Cost centres** page where you can display an overview of the cost centers and create cost centers. For more information, see *4.1.14 Creating cost centers*.

### 4.1.1 Defining general financial settings

Before you use the financial applications in Exact Synergy Enterprise, you should define the financial settings. With the financial settings, you can configure the functions available in the **Financial** module. Among the most important general financial settings you should define are the default **Currency**, **Country**, and the **Check closed periods** options. To define the general financial settings, go to Modules → Financial → Setup → General → Settings, and then click **Edit**.

To set up the general financial settings, function right **39 - Maintain financial settings** is required. Users with the **General manager** and **Controller** roles have this function right.

Financial: Settings

X Close
Save

**General**

Main holding division	602	x		<a href="#">MacBean CoffeeWorld</a>
Country	NL			<a href="#">Netherlands</a>
Currency	EUR — Euro			
Check closed periods	Date ▼			

**General ledger links**

Calculation differences		x		<a href="#">MacBean CoffeeWorld</a>
Euro calculation difference				<a href="#">Netherlands</a>

**Export: G/L Account**

Classification	▼
Sub-classification	▼

**Import**

Reopen: Periods (Automatically)	<input type="checkbox"/>
Show alert for	1 ▼ Days
Document: Type	Miscellaneous ▼

**Import: Check**

Document: Deletion date	Never ▼
-------------------------	---------

## General section

### Main holding division

Type or select the reporting entity to determine the organization that needs to prepare the general purpose financial reports for financial consolidation. If financial consolidation is not required, type or select a division.

### Country

Type or select the default country to be used in the system at **Country**. Only active countries can be selected.

## Currency

At **Currency**, type or select the default currency to be used in the system. This is important as you need to define the default currency before the system can be operational. Once you have created transactions in the default currency, it is not possible to change the default currency of the system. Only active currencies can be selected. For more information, see *4.1.5 Activating currencies*.

## Check closed periods

Select **Date** or **Reporting date** at **Check closed periods** to determine which is to be used when checking the close or open status of the financial period for the division.

## General ledger links section

### Calculation differences

Type or select the default general ledger account to be used for recording currency calculation differences.

### Euro calculation difference

Type or select the default general ledger account to be used for recording Euro calculation differences.

**Note:**

Before you can select the general ledger accounts, you need to create the general ledger accounts. For more information, see *4.1.8 Creating corporate and division general ledger accounts*.

## Export: G/L Account section

### Classification

Select the classification of the general ledger account category used when exporting the general ledger schema (chart of accounts) from Exact Synergy Enterprise.

### Sub-classification

Select the sub-classification of the general ledger account category used for exporting the general ledger schema from Exact Synergy Enterprise.

**Note:**

Only active general ledger account categories can be selected at **Classification** and **Sub-classification**. For more information, see *4.1.9 Defining general ledger account categories*.

## Import section

### Reopen: Periods (Automatically)

Select this check box to automatically reopen the closed financial periods when financial entries are imported into these periods. If the check box is not selected, reopening of closed periods has to be done manually.

### Show alert after

Select a number to indicate the maximum number of days that will be displayed at **Days** in the **Import: Status** column in the division status report. This report can be accessed at Modules → Financial → Reports → Analysis → Division: Status. The report allows you to identify the last date and the number of days the financial transactions were uploaded. If the last import date in the report exceeded the number of days defined at **Show alert after**, you will see a cross in the report. This is also displayed at **Days** in the **Import: Status** column. You can enter a maximum of 30 days for this field.

### Document: Type

Select a document type to display the default job report when the background check on the financial transactions is made. This report is displayed when you click **Date** in the **Check** column in the **Division: Status** report.

## Import: Check section

### Document: Deletion date

Select a number to indicate the number of days required to delete reports that record the comparisons of the financial data by division between Exact Synergy Enterprise and its back-office. You can enter a maximum of 30 days for this field.

## Import financial data section

### Document type

Select the document type to display the **Save attachment** check box at Modules → Financial → Entry → Transactions → Import financial data. If you do not make a selection here, the check box will be unavailable.

#### Note:

This section is available only if you have the module license **YA1040 – Financial consolidation** and option **470**.

## Financial consolidation section

### Opening balance: Year / Period

Select a year and type a period to enter the opening balance for financial consolidation and start the consolidation at the fixed period of the financial year. You can leave this blank if you do not need to enter any consolidation opening balances as in the case when you run financial consolidation from the very first period in the system. This case is probably only true for new Exact Synergy Enterprise installations.

**Note:**

This section is available only if you have the module license **YA1040 – Financial consolidation** and option **470**.

## 4.1.2 Creating financial years and periods

Financial figures are statutorily required to be reported based on financial years. Meanwhile, business performance figures can be reported on a periodic basis, for example, on a monthly frequency within a financial year. Therefore, such financial year and periods need to be defined before the system can be used for creating financial entries and reporting of financial data. In addition, it is also necessary to create the financial years and periods for all the different divisions as different divisions may have different financial years and periods. Apart from these, the system also supports the definition of broken-book years (financial years that start other than 1 January) as not all financial years are according to calendar years and start on 1 January.

To create financial years, function right **195 - Maintain years/periods** is required. Users with the **Controller** role have this function right.

### To create financial years and periods:

1. Go to Modules → Financial → Setup → General → Financial years / Periods, and then click **New**. You will see the following page.

The screenshot shows a web form titled "Financial year". At the top left, there are two buttons: "Close" and "Generate". Below the title, there are four input fields:
 

- Division:** An empty text box with a search icon and a warning icon to its right.
- Year:** A text box containing "2016".
- Date:** Two date pickers showing a range from "01-01-2016" to "31-12-2016".
- Frequency:** A dropdown menu currently set to "Monthly".

2. Type or select the division at **Division**.
3. By default, the year and date displayed at **Year** and **Date** will be set to the year after the last date available in the system. Alternatively, you can type a year, or type or select a date for which you want to generate the financial year for.
4. Select the frequency for the new financial year at **Frequency** and select the **Generate: Period mapping** check box to generate the period mapping for the reporting entity and its subsidiary together with the new financial year.

**Note:**

This check box is enabled only when the division selected is a reporting entity.




5. Click **Generate** to create the financial year and periods for the division, or **Close** to exit.

**Note:**

All fields with the "!" icon are mandatory.

























Once the financial year or period table has been generated, click the year hyperlink in the overview of financial years of a division to view the table, as shown in the following page:

## Financial year: 2016

X Close
Save
Delete

Division [602 — MacBean CoffeeWorld](#)  
 Year 2016  
 Date 01-01-2016 - 31-12-2016

Period	Start date	End date
1	01-01-2016 	31-01-2016 
2	01-02-2016 	29-02-2016 
3	01-03-2016 	31-03-2016 
4	01-04-2016 	30-04-2016 
5	01-05-2016 	31-05-2016 
6	01-06-2016 	30-06-2016 
7	01-07-2016 	31-07-2016 
8	01-08-2016 	31-08-2016 
9	01-09-2016 	30-09-2016 
10	01-10-2016 	31-10-2016 
11	01-11-2016 	30-11-2016 
12	01-12-2016 	31-12-2016 



### 4.1.3 Creating broken-book years

You can create broken-book years (financial years that start other than January 1) by following similar steps at 4.1.2 *Creating financial years and periods*. However, you should change the start and end dates of the financial year according to the needs of your company.

#### To create broken-book years:

1. Go to Modules → Financial → Setup → General → Financial years/Periods, and then click **New**. You will see the following page:

The screenshot shows the 'Financial year' configuration interface. At the top, there are three icons: a document with a plus sign, a star, and a question mark. Below these are two buttons: 'Close' and 'Generate'. The main form contains the following fields:

- Division:** An empty text input field with a magnifying glass icon and a warning triangle icon to its right.
- Year:** A text input field containing '2016'.
- Date:** Two date input fields. The first contains '01-01-2016' and the second contains '31-12-2016', separated by a hyphen. Both date fields have calendar icons to their right.
- Frequency:** A dropdown menu with 'Monthly' selected and a downward arrow icon to its right.

2. Type or select the division at **Division**.
3. At **Year**, type the year for which you want to generate the broken-book. At **Date**, type the start and end dates for the broken-book year that you want to generate. In the example shown, you can type the start date as “01-01-2016” and the end date as “31-12-2016”.
4. Select the frequency for the new financial year at **Frequency** and select the **Generate: Period mapping** check box to generate the period mapping for the reporting entity and its subsidiary together with the new financial year.

#### Note:

This check box is enabled only when the division selected is a reporting entity.

5. Click **Generate** to create the financial year and periods for the division, or **Close** to exit.

#### Note:

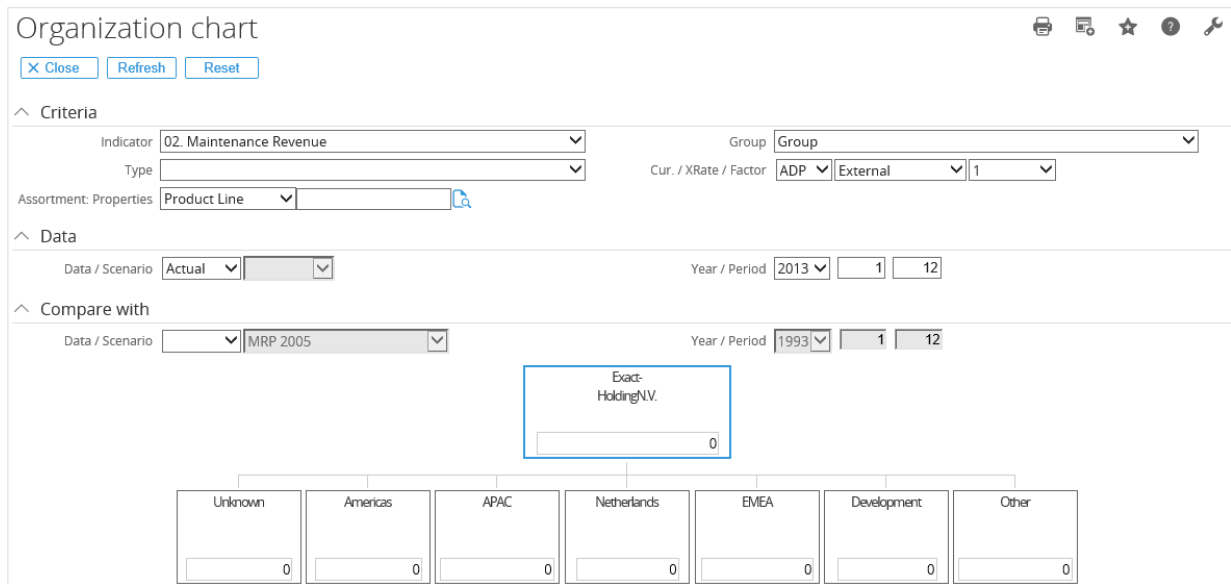
All fields with the "!" icon are mandatory.

### 4.1.4 Creating budget scenarios

Budgets are estimated future costs and revenues used in financial and business performance planning. Budgeted figures are later compared with actual figures to monitor the progress of the business performance for further actions. In Exact Synergy Enterprise, a budget plan is known as a budget scenario.

Generally, budgeting is done with figures assigned to the general ledger accounts, but it can be further refined to include individual cost centers, projects, employees, and even items. Different budget scenarios can be created for monitoring the progress of actual performance against the planned scenarios. To create budget scenarios, function right **32 - Maintain Budget Scenario** is required. Users with the **General Manager** and **Controller** roles have this function right.

The following is an example of an organization chart that compares the actual revenue with the budgeted revenue based on a budget scenario accessible at Modules → Financial → Reports → Analysis → Organization chart:



**To create budget scenarios:**

1. Go to Modules → Financial → Setup → Master data → Budget scenarios, and then click **New**. You will see the following page:

Budget scenario

Created by Demo User 30-08-2016 05:18

Scenario

Description

Allow: Import

Year / Period start  /

Year / Period end  /

Status / Security level

2. At **Scenario**, type a code for the new budget scenario.
3. Type the description of the new budget scenario at **Description**.
4. Select the **Allow: Import** check box to allow budget transactions to be imported for the budget scenario via XML.
5. At **Year / Period start and Year / Period end**, select a start and end year and period for the new budget scenario.
6. Select the status of the new budget scenario at **Status**. There are three options available, which are **Active**, **Block**, and **Free**. Select **Active** to create budget scenarios which you want to use, **Block** for budget scenarios that you do not want to use, and **Free** to create free budget scenarios which are non-active budget scenarios.
7. Click **Save** to save the new budget scenario.

**Note:**

All fields with the "!" icon are mandatory.

## 4.1.5 Activating currencies

Exact Synergy Enterprise provides a complete list of contemporary currencies. Before these currencies (each defined with an ISO currency code) can be used in the system, they must first be activated. Generally, currencies that need to be activated are:

- The default currency used by the company in financial and management reports.
- The different currencies used by all other divisions across the world.
- Other currencies that are used in the transactions.

To activate currencies, function right **33 - Maintain Currencies** is required. Users with the **General manager** and **Controller** roles have this function right.

### To activate currencies:

1. Go to Modules → Financial → Setup → General → Currencies, and click **Show** to display all the available currencies in the system. You will see the following page:

Code	Description	Exchange rate	Active
ADP	Andorra Peseta		X
AED	Dhram - United Arab Emirates		X
AFA	Afghani		X
ALL	Lek		X
AMD	Armenian Dram		X
ANG	Netherlands Antillian Guilder		X
AOA	Kwanza		X
AOK	Kwanza		X
ARS	Argentina Peso		X
ATS	Schilling	1 EUR = 13.760300 ATS	X
AUD	Australian Dollar		X

2. Select a currency check box in the first left column and click **Activate** to activate the currency. You can select multiple currencies and activate them at the same time. Once this is done, a green check mark will replace the red cross to indicate that the selected currency is now active.

#### Tip:

You can also activate a currency by clicking on the hyperlink of the currency code in the **Code** column. This will open the respective currency details page. On that page, select the **Active** check box to activate the currency, and click **Save** to save the changes.

### 4.1.6 Creating and maintaining exchange rates

The default currency is used in financial and management reporting purposes. Since exchange rates fluctuate, those of the activated currencies (against the default currency) should be maintained in the system periodically. The **Financial** module is capable of automating currency conversion for transactions involving different currencies. Before this conversion process can be done, you should create and maintain the period and daily exchange rates of the currencies.

To create and maintain exchange rates, function right **36 - Maintain Currencies Period Rates** and function right **51 - Maintain Exchange Rates** are required. Users with the **General manager** and **Controller** roles have these function rights.

#### To create and maintain exchange rates:

1. Go to Modules → Financial → Setup → General → Currencies, and then click **Show**. You will see the overview of currencies based on the defined criteria.
2. Select a currency (active or inactive) for which you want to create or modify the exchange rates by clicking the hyperlink in the **Code** column. You will see the following page:

Currency: ADP, Andorra Peseta

[Close](#) [Save](#) Created by 02-07-2001 19:21  
Modified by Mah 25-08-2010 10:56

**General** **Precision**

Currency: ADP  
Description: Andorra Peseta  
Active:

Exchange rates: 6  
Amounts:   
Prices:

**Euro**  
EMU:   
Since:

**Exchange rates**  
[New](#)  Period  Daily

Period	Anglo-Saxon			Standard		
	Average	Closing	Budget	Average	Closing	Budget
2014-8	1 EUR = 2.000000 ADP	1 EUR = 1.000000 ADP	1 EUR = 1.000000 ADP	1 ADP = 0.500000 EUR	1 ADP = 1.000000 EUR	1 ADP = 1.000000 EUR

**Hyperinflationary** [New](#)

Effective year / Period: Hyperinflationary

3. Under the **Exchange rates** section, select **Period** to create period exchange rates or **Daily** to create daily exchange rates. Then, click **New**. You will see the following page if **Period** has been selected:

Currency: Exchange rate (Period)

[Close](#) [Save](#) [Save + New](#) ?

**General** **Rates**

Year:  ×  
Period:

Average 1 EUR =  FRF  
Closing 1 EUR =  FRF  
Budget 1 EUR =  FRF

4. Type the year and period at **Year** and **Period** under the **General** section and the average, closing, and budget rates at **Average**, **Closing**, and **Budget** under the **Rates** section.
5. Click **Save** to save the information, or **Close** to exit.

6. If **Daily** has been selected under the **Exchange rates** section, you will see the following page:

## Currency: Exchange rate (Daily)

Created by Demo User 30-08-2016 05:26

X Close
Save
Save + New

Date	Rates
Date <input style="width: 80%;" type="text" value="30-08-2016"/>	Exchange rate 1 EUR = <input style="width: 80%;" type="text" value="1.00000"/> FRF

7. Type or select the date at **Date** under the **Date** section, and type the exchange rate at **Exchange rate** under the **Rates** section.
8. Click **Save** to save the information, or **Close** to exit.

**Tip:**

For active currencies, you can also view and create the exchange rates via Modules → Financial → Reports → TAX / Currencies → Exchange rates.

9. Under the **Hyperinflationary** section, click **New**. You will see the following page:

## Currency: Hyperinflationary

Created by Jo-Anna Goh Li Ping 30-08-2016 11:32

X Close
Save

### General

Hyperinflationary

Year

Period

10. Select the **Hyperinflationary** check box to set the currency as a hyperinflationary currency, and type the effective year at **Year** and period at **Period** for the currency to become hyperinflationary. By default, all currencies will be non-hyperinflationary. A currency will only become hyperinflationary after the user has selected the **Hyperinflationary** check box.
11. Click **Save**.

### 4.1.7 Importing daily exchange rates

Apart from creating and maintaining exchange rates in Exact Synergy Enterprise, you can also import daily exchange rates from an external source in the CSV format.

To import daily exchange rates, function right **33 - Maintain Currencies** is required. Users with the **General manager** and **Controller** roles have this function right.

#### To import exchange rates:

1. Go to Modules → Financial → Setup → General → Currencies, and then click **Import: XRate**. You will see the following page:

2. Under the **Data** section at **Date**, type or select the date. By default, the current date is displayed.
3. At **File**, click **Browse** to search and select the import file which is in the CSV format.
4. Click **Import** to import the information, or **Close** to exit.

#### Tip:

When you create the CSV file for the exchange rates in Microsoft Excel, you should type the targeted currency codes in the first column, followed by the currency description in the second column, and the exchange rates of the targeted currencies against the default currency in the third column. See the following example:

	A	B	C	D
1	AED	United Arab Emirates Dirham	4.793106	
2	USD	US Dollar	1.25	
3	GBP	Pound Sterling	0.67072	
4	JPY	Japanese Yen	166.097	
5	CAD	Canadian Dollar	1.43162	
6	MYR	Malaysian Ringgit	4.76121	
7				

## 4.1.8 Creating corporate and division general ledger accounts

When creating the chart of accounts, it must reflect the organization and management structure of a company. You can create general ledger accounts at a corporate level to reflect the corporate schema. In addition, you can also create general ledger accounts used by specific divisions.

To create the corporate general ledger accounts, function right **10 - Maintain corporate G/L** is required. Users with the **General manager** and **Controller** roles have this function right.

Meanwhile, to create division general ledger accounts, function right **12 - Maintain division G/L** is required. Users with the **General manager** and **Controller** roles have this function right.

### To create corporate general ledger accounts:

1. Go to Modules → Financial → Setup → Master data → G/L Accounts or go to Modules → Financial → Reports → G/L Accounts → Chart of G/L's. You will see the following page:

Financial: G/L Accounts

Criteria

Report: **Corporate** | Type / Subtype: | Debit/Credit / XRate type: | G/L Account: | Description: | Page size: 15 |

G/L	Type	Subtype	Debit/Credit	XRate type
<input type="checkbox"/> 0001 - Lands	B/S	Bank account	Debit	Average
<input type="checkbox"/> 0100 - Goodwill	B/S	Neutral account	Debit	Closing
<input type="checkbox"/> 0105 - Accumulated amortization of goodwill	B/S	Neutral account	Credit	Closing
<input type="checkbox"/> 0110 - Startup costs	B/S	Neutral account	Debit	Closing
<input type="checkbox"/> 0115 - Accumulated amortization of start up costs	B/S	Neutral account	Credit	Closing
<input type="checkbox"/> 0120 - Purchased software	B/S	Neutral account	Debit	Closing
<input type="checkbox"/> 0125 - Accumulated amortization purchased software	B/S	Neutral account	Credit	Closing
<input type="checkbox"/> 0130 - Internally Generated Software	B/S	Neutral account	Debit	Closing
<input type="checkbox"/> 0135 - Cum. amortization internally generated software	B/S	Neutral account	Credit	Average
<input type="checkbox"/> 0150 - Customer Base	B/S	Neutral account	Debit	Closing

2. By default, **Corporate** is selected at **Report** under the **Criteria** section. Next, click **New**. You will see the following page:

G/L Account (Corporate)

Created by Jo-Anna Goh Li Ping 30-08-2016 11:37

General

G/L: | Description: | Type / Debit/Credit: B/S | Debit | Subtype / XRate type: Neutral account | Average | Policy: |

Categories

External reporting 2 (until FY 2003): | External Reporting 1 (until FY 2003): | 2. Categories: | 1. Maincategory: | Category 5: | Main Categories: | Categories: | Sub Categories: | Category 9: | Category 10: |



3. Type the general ledger number at **G/L**.
4. At **Type**, select the required general ledger account.

**Note:**

It is important to select the correct type of general ledger account as this setting will determine whether the financial entries of the general ledger account are registered to the balance sheet or profit & loss statement.

5. At **Debit/Credit**, select the type of entry for the general ledger account. This determines which side the balance of the general ledger account should be presented.
6. Click **Save** to save the information, or **Close** to exit.

**Note:**

All fields with the "!" icon are mandatory.

**Tip:**

The categories available for selection under the **Categories** section are dependent on the defined categories at Modules → Financial → Setup → Master data → Categories.

**To create division general ledger accounts:**

1. Go to Modules → Financial → Setup → Master data → G/L Accounts or Modules → Financial → Reports → G/L Accounts → Chart of Chart of G/L's.
2. Select **Division** at **Report** under the **Criteria** section. You will see an additional field next to **Report** if you select **Division**, as shown in the following page:

Financial: G/L Accounts ✕ 🖨️ 📄 ☆ ?

✕ Close Refresh Reset New Delete >

^ Criteria

Report	Division	000	Exact Holding N.V.	Type / Subtype	
Layout	List			Debit/Credit	
G/L Account				Blocked / Linked	
Description					

3. Next, type or select a division code. Then, click **New**. You will see the following page:

G/L Account (Division) 📄 ?

✕ Close Save Save + New Created by Jo-Anna Goh Li Ping 30-08-2016 11:41

General	Categories
Division 000 — Exact Holding N.V.	Main Categories
G/L <input type="text"/> ⚠️	Categories
Description <input type="text"/>	Sub Categories
Type / Debit/Credit B/S Debit	
Subtype Neutral account	
Policy <input type="text"/> 🔍	
G/L: <input type="text"/> 🔍	
Corporate <input type="text"/>	
Blocked <input type="checkbox"/>	

4. Type the general ledger number at **G/L**.
5. Click **Save** to save the information, or **Close** to exit.

**Note:**

All fields with the "!" icon are mandatory.

### 4.1.9 Defining general ledger account categories

General ledger account categories offer different classified views on your financial data for reporting purpose. Quick reference of financial data for particular categories is thus, made possible.

You can have up to 10 general ledger account categories for both corporate and division general ledger accounts. You can activate, deactivate, or modify these categories.

To create and modify general ledger account categories, function right **29 - Maintain account categories** is required. Users with the **General manager** and **Controller** roles have this function right.

#### To define general ledger account categories:

1. Go to Modules → Financial → Setup → Master data → Categories. You will see the following page:

G/L Accounts: Categories		
<span>X Close</span> <span>Refresh</span>		
^ Criteria		
Report <span>Corporate</span>		
Code ▲▼	Description ▲▼	Active
1	Category 1	✓
2	Category 2	✓
3	Category 3	✗
4	Category 4	✗
5	Category 5	✗
6	Category 6	✗
7	Category 7	✗
8	Category 8	✗
9	Category 9	✗
10	Category 10	✗

- At **Report** under the **Criteria** section, select **Corporate** to define the categories for the corporate general ledger accounts or **Division** to define the categories for the division general ledger accounts. If **Division** is selected, type or select the division code.
- Next, select the category code that you want to activate or modify in the **Code** column. You will see the following page:

G/L Accounts (Corporate): Category - Category 1

[Close](#) [Save](#)

General

Description  x

Active

Subcategories [Add](#)

Subcategory ▲▼	Description ▲▼
<none>	Onbekend
001	Balans
1	Current Assets
2	Incidental Revenue
3	Equity
4	Costs
5	Liquide middelen

**Note:**

You will see the **Division** field only if you have selected **Division** at **Report** under the **Criteria** section on the **G/L Accounts: Categories** page. If **Corporate** has been selected at **Report**, you will only see the **Description** field and **Active** check box.

- Type a description for the general ledger account category at **Description** and select the **Active** check box to activate it.
- Click **Add** to add subcategories to the category.
- Click **Save** to save the information, or **Close** to exit.

### 4.1.10 Copying general ledger account schemas

It is possible to copy the general ledger account schema of one division or corporate level to another division. This allows you to quickly set up the chart of accounts for a new division.

To copy the chart of accounts, function right **12 - Maintain division G/L** is required. Users with the **General manager** and **Controller** roles have this function right.

#### To copy general ledger account schemas:

1. Go to Modules → Financial → Setup → Master data → G/L Accounts or Modules → Financial → Reports → G/L Accounts → Chart of G/L's, and then click **Copy**. You will see the following page:

The screenshot shows a web form titled "G/L Accounts: Copy". At the top left, there is a "Close" button with an 'X' icon and a "Save" button. Below the title bar, the form is divided into two main sections: "Source" and "Target".

In the "Source" section, there is an "Action" dropdown menu currently set to "Corporate > Division" and a "Division" field containing the text "Corporate".

In the "Target" section, there is a "Division" field that is currently empty. To the right of this field, there is a blue magnifying glass icon and a yellow warning triangle icon.

2. Under the **Source** section at **Action**, select the action for which you want to perform the copying. There are four options available, which include:
  - **Corporate > Division** — Select this option to copy the general ledger account schema from the corporate level to a division level.
  - **Division > Corporate** — Select this option to copy the general ledger account schema from a division level to the corporate level.
  - **Division > Division** — Select this option to copy the general ledger account schema from a division level to another division level.
  - **Division: Links > Division** — Select this option to copy the general ledger corporate account links of a division level to another division level.
3. At **Division**, type or select the source division from which the general ledger schema will be copied. This will depend on the action you have selected. If you have selected **Corporate > Division** at **Action**, the **Division** field will show **Corporate** and you cannot select a division here as the source of general ledger account schema will be taken from the corporate level general ledger account schema.
4. Under the **Target** section, type or select the division at **Division** to copy the source general ledger account schema to the selected division. This will depend on the action you have selected. If you have selected **Division > Corporate** at **Action**, the **Division** field will show **Corporate** and you cannot select a division here as the target of the general ledger account schema to be copied to is the corporate level.
5. Click **Save** to perform the copying, or **Close** to exit.

#### Note:

All fields with the "!" icon are mandatory.

### 4.1.11 Setting up organization structure

It is important that the organization structure is properly set up in the system to allow smooth running of your business operations at any time. The number of divisions that you can create to form the organization structure, is based on your Exact Synergy Enterprise license. These divisions can be categorized into different group layouts, for example, according to geographical, functional, and product layouts.

Based on your organization structure, appropriate function rights structure should also be created. For example, functional roles and rights can be assigned according to the corporate, division group, division, cost center group, cost center, and reseller levels so that a person with the adequate level of function rights can perform specific functions in the system.

In general, Exact Synergy Enterprise supports a three-level organization structure. These levels are:

- Corporate level — By default, this highest level is provided by the system.
- Division group level — Division groups can be created and displayed according to the group layouts which have been defined in the system.
- Division level — Divisions or subsidiaries across the organization structure.

### 4.1.12 Creating divisions

A division represents a legal entity of the organization and operates using a different name from the organization. After groups have been defined, divisions can be created to further define the organization structure.

To create divisions, function right **366 - Maintain division** is required. To modify divisions, function right **90 - Maintain division** is required. Users with the **General manager**, **HR**, and **HR assistant** roles have these function rights.


#### To create divisions:

1. Go to Modules → HRM → Setup → Organization → Divisions, and then click **New**.

**General**

Code 602


Name


Country   Netherlands


Default


Tax number

Website

Start date   (dd-mm-yyyy)

End date   (dd-mm-yyyy)

Cost center  

Currency   Euro

Security level



2. Under the **General** section at **Code**, type a number of up to three digits to specify the code for the division. This cannot be changed after you have saved the division.
3. At **Name**, type the name of the division.
4. Type or select a country code at **Country** to define the country of the division.
5. At **Start date**, type or select a date to define the start date of the division.
6. At **Security level**, type a number of up to four digits to define the security level for the division.


**Note:**

Users with lower security levels will not be able to select divisions with higher security levels in fields associated with divisions.

**Financial reporting**

Reporting entity

Presentation currency   

CTA G/L  

7. Under the **Financial reporting** section at **Reporting entity**, select the check box to define the division as a reporting entity.


**Note:**

By default, this check box is not selected. However, the main holding division defined at Modules → Financial → Setup → General → Settings must be a reporting entity. Thus, this check box will be selected and disabled.

8. At **Presentation currency**, type or select the currency code to be used in the financial reporting.

**Note:**

This field is available only if the Reporting entity check box is selected.

Address	
Account	60110 
Address	Fregatweg 151
Zip code / City	6222 NZ Maastricht
Phone / Fax	+31 26 264 7000 +31 26 264 7001
Title / Contact	MR --
E-mail	
Country / State	Netherlands

9. Under the **Address** section at **Account**, type or select the account code of the division.

**Note:**

Other information under this section will be automatically filled in. These details are the information filled in when you create the account for the division.

Schedule	
Update: FTE	<input type="checkbox"/>
Generate: MRS	<input checked="" type="checkbox"/>

10. Under the **Schedule** section, select the **Update: FTE** check box to allow the system to automatically update the Full Time Equivalents (FTEs) of all employees when their work schedules are modified.

**Note:**

This function is applicable only if the **Activate: Advanced Work Schedules** check box at Modules → HRM → Setup → General → Settings is not selected.

11. Select the **Generate: MRS** check box to enable the Master Resource Schedule (MRS) to be automatically generated when an entry for an employee is created.



12. After filling in other relevant details, click **Save** to save the new division.

**Note:**

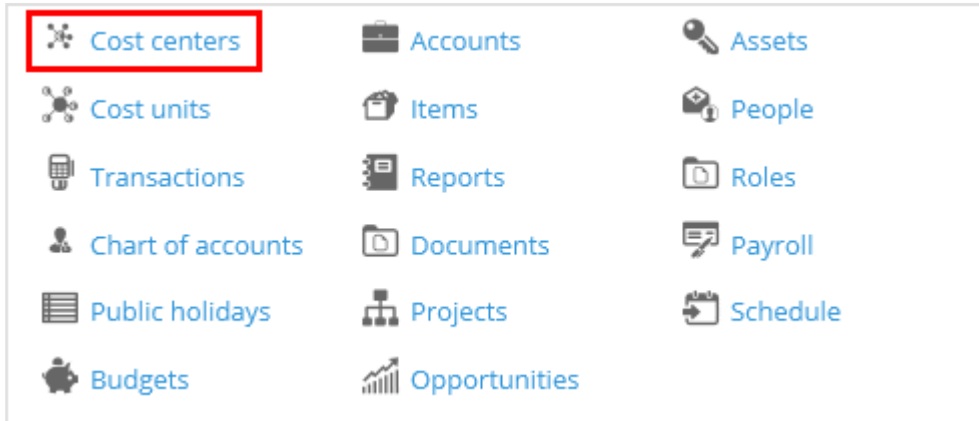
All fields with the "!" icon are mandatory.

**Tip:**

You can also create divisions at Modules → Financial → Setup → Organization → Divisions.

### 4.1.13 Defining cost center group layouts and subgroups

To enhance the view of a cost center layout, it is possible to set up cost center groups. The cost center layout can be viewed by clicking **Cost centers** under the **Monitor** section when viewing the division card.



You can define up to four groups. Cost center groups are used to classify cost centers based on criteria, such as the functional area. Cost center groups can then be subdivided into one or more cost center subgroups. For example, the cost center group “Functional area” may consist of the cost center subgroups “Sales”, “Support”, and “Training and Consultancy”.

To maintain cost center groups and subgroups, function right **48 - Maintain Cost center Layouts** is required. Users with the **General manager** and **Controller** roles have this function right.

#### To define cost center group layouts:

1. Go to Modules → HRM → Setup → Organization → Groups: Cost centers. You will see the following page:

HRM: Cost center groups

Close

→ Groups

Code	Description
1	Cost Center Layout 1
2	Cost Center Layout 2
3	Cost Center Layout 3
4	Cost Center Layout 4

- Click the description of the cost center group in the **Description** column. You will see the following page:

## HRM: Cost center groups - Business units

🏠
★
?

X Close
Save

Criteria

Description Business units x

Subgroup New

Subgroup	Description
<none>	Unknown
001-BACC	Business unit financial services
001-BCN	Business unit noord
001-BCW	Business unit west
001-BCZ	Business unit zuid
001-BED	Business unit education
001-BEN	Business unit Large Accounts
001-BENT	BU Enterprise General Management
001-BMA	Business unit manufacturing
001-BMTW	Business unit maatwerk
001-BPH	Business unit payroll & HRM

- Under the **Criteria** section at **Description**, type the name of the cost center group.
- Click **Save** to save the changes made.

**Tip:**

You can also define the cost center groups at Modules → Financial → Setup → Organization → Cost center groups.

**To define cost center subgroups:**

1. Go to Modules → HRM → Setup → Organization → Groups: Cost centers, and then click the required hyperlink in the **Description** column.

HRM: Cost center groups - Business units

Criteria

Description

Subgroup

Subgroup	Description
<none>	Unknown
001-BACC	Business unit financial services
001-BCN	Business unit noord
001-BCW	Business unit west
001-BCZ	Business unit zuid
001-BED	Business unit education
001-BEN	Business unit Large Accounts
001-BENT	BU Enterprise General Management
001-BMA	Business unit manufacturing
001-BMTW	Business unit maatwerk
001-BPH	Business unit payroll & HRM

**Note:**

You can change the description of the subgroup by clicking the name of the subgroup in the **Description** column.

2. Click **New** to add new subgroups to the cost center group. You will see the following page:

HRM: Subgroup - New

General

Subgroup  

Description  

3. Under the **General** section at **Subgroup**, type the code of the cost center subgroup.
4. At **Description**, type the description of the cost center subgroup. This is mandatory.
5. Click **Save** to save the new cost center subgroup.

**Note:**

All fields with the "!" icon are mandatory.

**Tip:**

You can also define the cost center subgroups by going to Modules → Financial → Setup → Organization → Cost center groups, and then clicking the description of the cost center group.

### 4.1.14 Creating cost centers

Cost centers give an extra organizational dimension to the division structure, not only from an organizational point of view but also from a financial one. After a division has been created, cost centers can be linked to a division. Cost centers often represent the different departments in a division, for example, Sales, Support, and Consultancy.

To create cost centers, function right **92 - Maintain cost centers** is required. Users with the **General manager** and **HR** roles have this function right.

#### To create cost centers:

1. Go to Modules → HRM → Setup → Organization → Cost centers, and then click **New**. You will see the following page:

HRM: Cost center - New

Created by 01-09-2016 10:55

Buttons: [Close](#) [Save](#) [Save + New](#)

General	Groups
Division: 036 <a href="#">Exact Asia Development</a>	Business units: Unknown
Code: [ ] !	Job groups: Unknown
Description: [ ] !	Offices: Unknown
Active: <input checked="" type="checkbox"/>	Market groups: Unknown

2. Under the **General** section at **Division**, type or select the division code to specify the division that the cost center belongs to.
3. At **Code**, type a code of up to eight characters for the cost center. This cannot be changed after you have saved the cost center.
4. At **Description**, type the description of the cost center.
5. Under the **Groups** section, select the cost center subgroup for each cost center group layout you have defined earlier to group the cost center under the group layouts and their respective subgroups.
6. After filling in other relevant details, click **Save** to save the new cost center.

#### Note:

All fields with the "!" icon are mandatory.

#### Tip:

You can also create cost centers by going to Modules → Financial → Setup → Organization → Cost centers, and then clicking **New**.

## 4.2 FINANCIAL SETTINGS

Financial settings are important as they are used in the financial-related functions in Exact Synergy Enterprise. The following page shows the information of the financial settings already defined when you set up a company in Exact Synergy Enterprise. You can view the information by going to the **Financial** section at Modules → System → Setup → Database → Set up company.

Financial			
Settings	Value	Status	Mandatory
Periods	<a href="#">132</a>	Done	Yes
Currencies: Active	<a href="#">4</a>	Done	Yes
Exchange rates: Period	<a href="#">1</a>	Open	Yes
Exchange rates: Daily	<a href="#">2</a>	Open	Yes
Categories: G/L Accounts	<a href="#">Check</a>	Done	Yes
Chart of Accounts: Corporate	<a href="#">111</a>	Done	Yes
Scenarios	<a href="#">4</a>	Open	Yes
Scenario: Default	<a href="#">Check</a>	Done	Yes

### Periods

The number displayed in the **Value** column indicates the number of periods which have been created in the system. Financial periods must first be created before financial entries can be imported or created in the system. Click the number hyperlink and you will see the **Financial years** page where you can display an overview of the financial years and periods, and create financial years and periods. For more information, see *4.1.2 Creating financial years and periods*.

### Currencies: Active

The number displayed in the **Value** column indicates the number of active currencies in the system. You need to activate the currencies before you can use the currencies. Click the number hyperlink and you will see the **Currencies** page where you can display an overview of the currencies and activate the currencies which you want to use in the system. For more information, see *4.1.5 Activating currencies*.

### Exchange rates: Period

The number displayed in the **Value** column indicates the number of periodical exchange rate updates created in the system. Click the number hyperlink and you will see the **Currencies** page where you can maintain the currencies as well as create and maintain the exchange rates. For more information, see *4.1.6 Creating and maintaining exchange rates*.

### Exchange rates: Daily

The number displayed in the **Value** column indicates the number of daily exchange rate updates created in the system. Click the number hyperlink and you will see the **Currencies** page where you can maintain the currencies as well as create and maintain the exchange rates. For more information, see *4.1.6 Creating and maintaining exchange rates*.

### Categories: G/L Accounts

Click the **Check** hyperlink in the **Value** column and you will see the **G/L Accounts: Categories** page where you can define the general ledger account categories. For more information, see *4.1.9 Defining general ledger account categories*.

### Chart of Accounts: Corporate

The number displayed in the **Value** column indicates the number of corporate general ledger accounts which have been created in the system. Click the number hyperlink and you will see the **Financial: Chart of accounts** page where you can create general ledger accounts. For more information, see *4.1.8 Creating corporate and division general ledger accounts*.

### Scenarios

The number displayed in the **Value** column indicates the number of budget scenarios currently available in the system. Click the number hyperlink and you will see the **Budget scenarios** page where you can create budget scenarios. For more information, see *4.1.4 Creating budget scenarios*.

### Scenario: Default

Click the **Check** hyperlink in the **Value** column and you will see the **Financial: Settings** page where you can define important financial settings. For more information, see *4.1.1 Defining general financial settings*.

## 4.2.1 Creating chart of accounts

In Exact Synergy Enterprise, you can create more than one general ledger account schema or chart of accounts. You can create a corporate level chart of accounts and another chart of accounts to be used by a specific division. For more information, see *4.1.8 Creating corporate and division general ledger accounts*, *4.1.9 Defining general ledger account categories*, and *4.1.10 Copying general ledger account schemas*.



## 4.3 HRM SETTINGS

The **HRM** module is used to store and share information regarding the people throughout the company. To take full advantage of the features the module has to offer, it is important to define the HRM settings. The following page shows information of the HRM settings already defined when you set up a company in Exact Synergy Enterprise. You can view the information by going to the HRM section at Modules → System → Setup → Database → Set up company.

HRM			
Settings	Value	Status	Mandatory
Settings	<a href="#">Check</a>	Done	Yes
Schedule: Default	<a href="#">1</a>	Done	Yes
Schedule: Division	<a href="#">1</a>	Done	No
Job titles	<a href="#">40</a>	Done	Yes
People	<a href="#">83</a>	Done	Yes

### Settings

Click the **Check** hyperlink in the **Value** column and you will see the **HRM: Settings** page where you can define important HRM settings. For more information, see *4.3.1 Defining HRM settings*.

### Schedule: Default

The number displayed in the **Value** column indicates the default work schedule created in the system. Click the number hyperlink and you will see the **HRM: Work schedule** page where you can create and maintain the work schedule. For more information, see *4.3.2 Creating default work schedule*.

### Schedule: Division

The number displayed in the **Value** column indicates the number of divisions with work schedules created for them. Click the number hyperlink and you will see the **HRM: Work schedule** page where you can create and maintain the work schedules. For more information, see *4.3.3 Creating work schedules for divisions*.

### Job titles

The number displayed in the **Value** column indicates the number of job titles in the system. Click the number hyperlink and you will see the **HRM: Job titles** page where you can create job titles. For more information, see *4.3.4 Setting up job system*.

### People

The number displayed in the **Value** column indicates the number of employees in the system. Click the number hyperlink and you will see the **HRM: Search - People** page where you can search for people. For more information on creating entries for employees, see *4.3.5 Creating entries for employees*.

### 4.3.1 Defining HRM settings

Besides the important HRM settings, such as the work schedules, job titles, employees, and other settings that are used to manage and share information of the people, you also need to define additional settings related to the network domain controller, e-mail server, application process, and other technical settings related to the **HRM** module. To define the **HRM** settings, go to Modules → HRM → Setup → General → Settings, and then click **Edit**.

To maintain the HRM settings, function right **88 - Maintain HRM Settings** is required. Users with the **HR** role have this function right.

### Server section

The **Exact.Jobs.SysMaint** background job creates the Windows user account and Microsoft Exchange Mailbox for each new employee or partner. Due to this, some settings in this section is for the background job.

#### Domain: New – People (Pre-Win2000)

You can configure the automatic creation of Windows user accounts for new employees in three ways:

- Leave the field blank to perform account management manually. This means that the background job is not triggered to perform functions, such as creating and deleting accounts, activating or deactivating employees, creating or deleting mailboxes, and closing HR periods.
- Type the application server name to create the accounts in the application server. This is not recommended in a multi-server setup.
- Type a Microsoft Windows domain name to have the accounts created under this domain. This can be the same as the domain for partners and customers.

#### use Active Directory

Select this check box to use **Active Directory**. The employee accounts will be created as **Active Directory** accounts in the organization unit and subdirectory defined at **Organization: Unit** and **Subdirectory**. This will allow you to segregate the types of accounts in the same domain using the **Active Directory** containers.

### create Exchange Mailbox

Select this check box to have Microsoft Exchange Mailbox created for new employees. In this case, the **use Active Directory** check box will be automatically selected. Microsoft Exchange should be operational before the **Exact.Jobs.SysMaint** background job runs.

### Organization: Unit (People)

Type the Active Directory organizational unit where you want the employee accounts to be created. If the field is left blank, the accounts will be created in the **Users** container by default. If the organizational unit container does not exist yet, it will be created by the **Exact.Jobs.SysMaint** background job. This field is available if the **use Active Directory** check box has been selected for people.

#### Note:

**Active Directory** can contain several containers. However, an organizational unit container can be created to store the Exact Synergy Enterprise accounts instead of the default **Users** container. This allows for differentiation between the locations of the Microsoft Windows user accounts created. You can have different containers for people, partners, and customers. The same also applies for the **Active Directory** subdirectory.

### Subdirectory

Type the sub-container of the Active Directory organizational unit specified at **Organization: Unit (People)** where you want the employee accounts to be created. If the subdirectory container does not exist yet, it will be created by the **Exact.Jobs.SysMaint** background job. This field is available if the **use Active Directory** check box has been selected for employees.

### People: Outlook Web Access

Type the Uniform Resource Locator (URL) of the Microsoft Exchange server if Microsoft Exchange is used with Exact Synergy Enterprise. This is available if the **create Exchange Mailbox** check box has been selected.

### Exchange server version

Select the relevant Microsoft Exchange version to be supported by the system. This is only available when the **create Exchange mailbox** check box is selected. By default, a blank option will be displayed. If you do not select an option when saving the settings, a message “Mandatory: Exchange server version” will be displayed.

### Exchange: Domain

Type the Microsoft Exchange domain. This field is available if the **create Exchange Mailbox** check box has been selected.

**Domain: New – Partner (Pre-Win2000)**

You can configure the automatic creation of Windows user accounts for new partners in three ways:

- Leave the field blank to perform account management manually. This means that the background job is not triggered to perform functions, such as creating, deleting, activating, and deactivating accounts.
- Type the application server name to create the accounts in the application server. This is not recommended in a multi-server setup.
- Type a Microsoft Windows domain name to have the accounts created under this domain. This can be the same as the domain for employees and customers.

**use Active Directory**

Select this check box to use **Active Directory**. The partner accounts will be created as **Active Directory** accounts in the organization unit and subdirectory defined at **Organization: Unit** and **Subdirectory**. This will allow you to segregate the types of accounts in the same domain using the **Active Directory** containers.

**Organization: Unit (Partners)**

Type the **Active Directory** organizational unit where you want the partner accounts to be created. If the field is left blank, the accounts will be created in the **Users** container by default. If the organizational unit container does not exist yet, it will be created by the **Exact.Jobs.SysMaint** background job. This field is available if the **use Active Directory** check box has been selected for partners.

**Subdirectory**

Type the sub-container of the **Active Directory** organizational unit specified at **Organization: Unit (Partners)** where you want the partners accounts to be created. If the subdirectory container does not exist yet, it will be created by the **Exact.Jobs.SysMaint** background job. This field is available if the **use Active Directory** check box has been selected for partners.

**Change password at next logon (People)**

Select this check box if you want to force the employees to change their password at next logon.

**Domain: New – Customer (Pre-Win2000)**

You can configure the automatic creation of Windows user accounts for new customers in three ways:

- Leave the field blank if you want to perform account management manually. This means that the background job is not triggered to perform functions, such as creating, deleting, activating, and deactivating accounts.
- Type the application server name to create the accounts in the application server. This is not recommended in a multi-server setup.
- Type a Microsoft Windows domain name to have the accounts created under this domain. This can be the same as the domain for employees and partners.

### use Active Directory

Select this check box to use **Active Directory**. The customer accounts will be created as **Active Directory** accounts in the organization unit and subdirectory defined at **Organization: Unit** and **Subdirectory**. This will allow you to segregate the types of accounts in the same domain using **Active Directory** containers.

### Organization: Unit (Customers)

Type the **Active Directory** organizational unit where you want the customer accounts to be created. If the field is left blank, the accounts will be created in the **Users** container by default. If the organizational unit container does not exist yet, it will be created by the **Exact.Jobs.SysMaint** background job. This field is available if the use **Active Directory** check box has been selected for customers.

### Subdirectory

Type the sub-container of the **Active Directory** organizational unit specified at **Organization: Unit (Customers)** where you want the customer accounts to be created. If the subdirectory container does not exist yet, it will be created by the **Exact.Jobs.SysMaint** background job. This field is available if the **use Active Directory** check box has been selected for customers.

### Request: Portal access

Select the request type that will be used to inform the account manager of the username and password sent to the customer. This allows the account manager to provide the username and password to the customer upon request.

### E-mail

Select the e-mail transport method:

- **Microsoft Outlook** — E-mails will be sent using Microsoft Outlook where e-mail attachments are sent separately. This is because Microsoft Outlook does not automatically combine e-mail text and attachments together in the e-mail body.
- **SMTP** — E-mails will be sent by SMTP using the server and port specified at **Server** and **Port** where e-mail text and attachments can be combined in the e-mail body. E-mail clients that do not support e-mail in HTML format can still display the e-mail as the content is sent in both plain text and HTML format.

### Server

Type the DNS name or IP address of the SMTP server. This field is available if **SMTP** has been selected at **E-Mail**.

### Port

Type the SMTP port number to use. This field is available if **SMTP** has been selected at **E-Mail**.

**Program: ID (Background - Process)**

Type the name of the custom DLL entry points. The background job will notify the DLLs listed here and execute the custom functions.

**Tip:**

You can write DLLs that conform to the **Exact.Jobs.SysMaint** specification to perform functions that are not handled by **Exact.Jobs.SysMaint**. For example, Exact Synergy Enterprise background jobs cannot create Lotus Notes accounts automatically. However, you can write a DLL that will perform this function and specify the DLL at **Program: ID (Background - Process)**.

**OCS presence**

Select this check box to activate the integration with the Office Communications Server (OCS) functionalities. The OCS functionalities allow you to instantly track the availability of people for sharing of real-time information and communication purposes.

**Privacy section**

Privacy
Levels of indirect managers permitted to view person specific documents and requests <input type="text" value="20"/>

**Levels of indirect managers permitted to view person specific documents and requests**

Select the levels of indirect managers allowed to view and/or search for documents, requests, and personal card information which have been set to security level 100.

**Expense claims section**

Expense claims
Request type  5003 — Expense claim

**Request type**

Select the request type to use for expense claims. By default, **Expense claim** is selected.

## Absence section

The screenshot shows the 'Absence' configuration form. It contains several input fields and checkboxes. On the left side, there is a field for 'Hours per day: Default' with the value '8.00'. Below it is 'Request type: Work time reduction' with the value '5013'. Further down is a checked checkbox for 'Split - Absence: Balance'. At the bottom left, there is a dropdown for 'Calculation - Entitlements: Automatically' set to 'Divisions (All)' and another dropdown for 'Day 1 Next period' set to 'Day 1 Next period'. On the right side, there are three rows for request types: 'Request type: Vacation' with value '5015', 'Request type: Sick' with value '5016', and 'Request type: Return to work' with value '5024'. At the bottom right, there is a field for 'Absence: Expiry date' with the value '--'.

### Hours per day: Default

Type the number of default work hours per day. This setting is used if the work hours for a division are not defined.

### Request type: Work time reduction

Type or select a default request type for the work time reduction request.

### Split – Absence Balance

Select this check box if you want to segregate the absence balance overview by the absence types.

### Calculation – Entitlements: Automatically

Select the option to calculate the absence entitlements automatically. There are three options available, which are:

- **None** — Select this option if you do not want to calculate the absence entitlements automatically. Instead, the calculation of the absence entitlements will be generated by closing the period.
- **Divisions (All)** — Select this option to automatically calculate the absence entitlements for all divisions.
- **Divisions (Settings)** — Select this option to automatically calculate the absence entitlements based on the settings per division.

Next, select a specific day in the following month on which the automatic calculation of absence entitlements is to take place.

### Request type: Vacation

Type or select a default request type for the vacation request.

### Request type: Sick

Type or select a default request type for the sick request.

### Request type: Return to work

Type or select a default request type for the return to work request. A return to work request can only be created via a parent request (by default, this is the sick report request). A return to work request is used to register partial absence when an employee returns to work partially during sickness.

**Absence: Expiry date**

Type or select a default absence expiry date of the absence balance. With the expiry date, users are able to view their absence balance status, which are brought forward from the previous year, and their unused absence balance with reference to the effective expiry date.

**Person: Planning section**

Person: Planning	
Working day	STANDAARDUUR <a href="#">Work Day</a>
Public holiday	WPH <a href="#">Working day on Public Holiday</a>
Activate: Advanced Work Schedules <input checked="" type="checkbox"/>	

**Working day**

Type or select the item code for the working day.

**Public holiday**

Type or select the item code for the public holiday.

**Activate: Advanced Work Schedules**

Select the check box to activate the advanced work schedule features. By default, this check box is not selected to allow users to use the existing work schedule application.

**Note:**

When this check box is selected and the setting is saved, a warning message is displayed to inform users of the implications of using the advanced features. Once the advanced features are enabled, this check box will be disabled and you are not allowed to clear the check box to deactivate the advanced features.

**Job title: Security level section**

Job title: Security level	
Required - Function rights (88): Security level: >	<input type="text" value="17"/> (HR,Corporate)

**Required – Function rights (88): Security level: >**

Type the maximum security level that a person with the **HR** role at group and division levels can set for other people. If you leave the field blank or type “0”, anyone with the **HR** role at group and division levels can set the security level for all. The role(s) that are linked to function right **88 - Maintain HRM Settings** are displayed next to the box.



## Competency section

### Method

Select **Simple** to enable the **Competencies Comparison Chart** function or **Advanced** to enable the enhanced function in **Competency management**.

### Final: Rating

Select the final rating for the competency calculation. The final rating calculated will be updated at **Competence profiles** in the personal card.

#### Note:

This field is available only if you have selected **Advanced** at **Method**.

### Request type

Type or select the request type of the notifications that will be sent to the managers and/or reviewers for reviewing purposes.

#### Note:

This field is available only if you have selected **Advanced** at **Method**.

### Calculation: Method

Select **Average**, **Summation**, or **Percentage** to define the method of calculation for the final rating of the applicant's or employee's competency profile. The calculation methods are defined as below:

- **Average** —  $\text{Sum of (each rated value x Factor) / Quantity of (competence involved x Factor)}$
- **Summation** —  $\text{Sum of (each rated value x Factor)}$
- **Percentage** —  $\text{Sum of [(each rated value x Factor) / Sum of (each highest field value x Factor)] x 100\%}$

#### Note:

This field is available only if you have selected **Advanced** at **Method**.

**Request: End date**

Select the time span that is allowed for the manager and/or reviewers to realize or process the review request. You can select one of the following:

- **Number of weeks: 1**
- **Number of weeks: 2**
- **Number of weeks: 3**
- **Number of months: 1**
- **Number of months: 3**

**Note:**

This field is available only if you have selected **Advanced** at **Method**.

**Reviewer**

Select **Manager** to allow the manager of the person being reviewed to review the competency of the person, or select **Manager & Person** to allow the manager of the person and the person being reviewed to review the competency of the person.

**Note:**

This field is available only if you have selected **Advanced** at **Method**.

**Customer: Vacancy**

Select this check box to enable the **Vacancy** button in the customer cards and the **Customer** field in the vacancy cards and reports.

**Note:**

This field is available only if you have selected **Advanced** at **Method**.

**Person: View profiles**

Select this check box to allow the person to view the active competency profile by clicking the hyperlink at **Competence profiles** under the **General** section in the personal card. If you do not select this check box, the person will not be able to view the active competency profile. However, if the person is an administrator, has the **HR** role, or is the reviewer for himself, the competency profiles can be viewed even if the **Person: View profiles** check box is not selected.

**Note:**

This field is available only if you have selected **Advanced** at **Method**.

## Performance review section

### Note:

A division that has its own performance review settings defined will not follow the settings defined in this section.

The screenshot shows a configuration form for performance reviews. It includes the following fields and values:

- Request type: 5000
- Request: End date: Number of weeks: 3
- Reviewer: Manager & Person
- Performance indicators: Method: Simple
- Final rating: Performance Review Expectation Scale
- Calculation: Method: Average
- Person: View profiles:

### Request type

Type or select the request type ID of the notifications that will be sent to the managers and/or person for reviewing purposes.

### Final: Rating

Select the final rating for the performance review calculation. The field types available for selection are field types with user-defined values. The final rating calculated will be updated at **Performance review: Last update** in the personal card.

### Request: End date

Select the time span that is allowed for the manager and/or person to realize or process the performance review request. You can select one option from the following:

- Number of weeks: 1
- Number of weeks: 2
- Number of weeks: 3
- Number of months: 1
- Number of months: 3

### Calculation: Method

Select **Average**, **Summation**, or **Percentage** to define the method of calculation for the final rating of the person's performance review.

### Note:

Refer to **Calculation: Method** under the **Competency** section for more information on the calculation methods.

### Reviewer

Select **Manager** to specify that it is mandatory for the manager of the person to review the performance of the person, or select **Manager & Person** to specify that it is mandatory for both the manager and the person to perform the review.

**Person: View profiles**

Select this check box to allow the person to view the performance review profiles belonging to the person. The performance review profiles are accessible via the hyperlink at **Performance review profiles** in the personal card.

**Performance indicators: method**

Select the **Simple** or **Advanced** option. By default, **Simple** is selected. For more information on the differences between the two methods, see *Advanced performance review method introduced (Doc ID: 26.210.647)* in Exact Synergy Enterprise.

**Target agreement section**

The screenshot shows a configuration panel titled "Target agreement". It contains several input fields:
 

- "Request type" with a text input field and a blue icon to its right.
- "Request: End date" with a dropdown menu currently showing "Number of weeks: 1".
- "Number of targets: Minimum / Maximum" with two adjacent text input fields separated by a slash.

**Note:**

A division that has its own target agreement settings defined will not follow the settings defined in this section.

**Request type**

Type or select the request type ID of the notifications that will be sent to the managers and/or person for reviewing purpose.

**Request end date**


Select the time span that is allowed for the manager and/or person to realize or process the target agreement review request. You can select one option from the following:

- Number of weeks: 1
- Number of weeks: 2
- Number of weeks: 3
- Number of months: 1
- Number of months: 3
- Number of months: 6
- Number of years: 1
- Number of years: 2
- Number of years: 3

**Number of targets: Minimum / Maximum**

Type the minimum and/or maximum number of targets allowed for each target agreement at the respective boxes. If the field is blank, users will be allowed to create any number of targets for each target agreement.

## Training section

Training
Request type: Training 

### Request type: Training

Select the request type(s) used for training purposes. These are the request types that are available for people to select from when he or she wants to participate in the training courses. These training requests are grouped in a report, which can be viewed from the personal card of the particular person.

#### Tip:

To access this report, open a personal card, click **Reports**, and then click **Training** under the **Reports** section.



## Budget section

Budget
Types: Person <input checked="" type="checkbox"/> Contractor <input checked="" type="checkbox"/> Employee <input type="checkbox"/> Student <input type="checkbox"/> Temporary

### Types: Person

Select the types of people to be included in the budget scenario reports. There are four options available, namely **Contractor**, **Employee**, **Student**, and/or **Temporary**.

## Vacancy section

Vacancy
Request type <input type="text" value="11002"/>  Vacancy
Attachment: Document type <input type="text" value="76"/>  Vacancy document

### Request type


Type or select the default request type for the vacancy request. The request will be automatically created and sent to the person defined in the **Workflow** module when a vacancy entry has been saved.


### Attachment: Document type


Type or select the document ID to specify the document type of the documents that will be attached to the vacancy card. This is mandatory. You must fill in this field before attaching any document in the vacancy card.

## Applicant section

Applicant

Request type: 11003 

Import: Document type: 3 

Confirmation template: 

Confirmation: Thank you for your application. We will contact you shortly.

Application phase:

1	Application Received	2	Application Rejected
3	Invite for phone interview	4	Invite for face to face interview
5	Interview time proposed	6	Interview time confirmed
7	Checking references	8	Job offer pending
9	Job offer accepted	10	Application terminated by applicant

### Request type

Type or select the default request type for the applicant request. The request will be automatically created and sent to the person defined in the **Workflow** module when a vacancy entry has been saved.

### Import: Document type

Select a document type to save an imported file containing the data of the applicants using this document type directly to Exact Synergy Enterprise.

#### Note:

This setting will only be applied if the **Save attachment** check box at Modules → HRM → Entry → HRM → Import: Applicants has been selected.

## Confirmation template

Type or select a document to be used as the response message that will be displayed to the applicant when he or she has saved an applicant entry into the system via a public web site. By default, if the **Confirmation template** field is left blank, the system will display the response message defined at **Confirmation** once the entry has been saved.

### Note:

Only response documents with security level "0" defined at the **Confirmation template** field can be viewed by the users. Otherwise, a blank page will be displayed. Users with the **Administrator** or **Web administrator** role are able to create the response document before it can be defined at **Confirmation template**. It is recommended that you create a document specifically for the response message only. To create a document, go to Modules → Documents → Entry → Entry → Document: New. For more information on creating document types, see *4.6 Document Settings*.

### Tip:

To create applicant entries in Exact Synergy Enterprise via a public web site, you can either copy and paste or create a hyperlink to link to <http://localhost/PublicWeb/docs/HRMApplicant.aspx?BCAction=0&> at **Document** under the **Frame – Content** section on the **Documents: Web site** page where you set up the public web site. For more information, see *Setting up public web sites (Doc ID: 17.667.379)* and *Creating and modifying web sites (Doc ID: 15.435.133)* on your Exact Synergy Enterprise.

## Confirmation

Type the message to be displayed to the applicant or employee when he or she has saved an applicant entry into the system.

## Application phase

Type the application phases that can be specified when creating and maintaining applicants in the system. For example, you can define several phases, such as Phase 1: Already sat for EQ and IQ test, Phase 2: Attended interview with Hiring Manager, Phase 3: Attended interview with HR Manager, and Phase 4: Video conferring with management in the Netherlands.

## Export: Excel section

Export: Excel
Process type <a href="#">30 - HRM Excel export</a>

## Process type

Click the hyperlink at **Process type** to view or modify the settings for the **HRM Excel export** process type. This process type allows the employee data to be exported in the Microsoft Excel format.

## Hyperlink: Services section

Hyperlink: Services
Map - Link <input type="text" value="Google"/>

### Map - Link

Select **MapQuest: Address** if you want to display the map of an address on the street level or select **MapQuest: City** if you want to display the map of the address on the city level.

## Request types allowed for Synergy user section

Request types allowed for Synergy user
Request type: 1 <a href="#">0 - Task</a>
Request type: 2 <a href="#">5015 - Vacation</a>

### Request type: 1 - 2

The two request types available for usage for Synergy users are displayed in this section. These request types cannot be changed.

## Request types allowed for Employee self-service role user section

Request types allowed for Employee self-service role user
Request type: 1 <input type="text" value="1"/> <a href="#">Checked task</a>
Request type: 2 <input type="text" value="5014"/> <a href="#">Unpaid leave</a>
Request type: 3 <input type="text" value="5006"/> <a href="#">Request for asset</a>
Request type: 4 <input type="text" value="5003"/> <a href="#">Expense claim</a>
Request type: 5 <input type="text" value="5001"/> <a href="#">HR Question</a>
Request type: 6 <input type="text" value="5004"/> <a href="#">Training request</a>
Request type: 7 <input type="text" value="5012"/> <a href="#">Special leave</a>
Request type: 8 <input type="text" value="5000"/> <a href="#">Review</a>
Request type: 9 <input type="text" value="6010"/> <a href="#">Appointment with response</a>
Request type: 10 <input type="text" value="6011"/> <a href="#">Appointment</a>
Request type: 11 <input type="text" value="5016"/> <a href="#">Sick Time</a>
Request type: 12 <input type="text" value="9007"/> <a href="#">I Need</a>
Request type: 13 <input type="text" value="5020"/> <a href="#">Test/exam planning</a>
Request type: 14 <input type="text" value="5021"/> <a href="#">Test/exam Answer</a>
Request type: 15 <input type="text" value="5023"/> <a href="#">Bonus Days</a>



**Request type: 1-15**

Type or select the request type at **Request type: 1-15** to define the request types that a user with the **Employee self-service** role can create. Users with the **Employee self-service** role are not able to create or participate in request types that are not specified in this section. **Employee self-service** is a functionality that provides people with the defined role to have access to view and request certain HR related information quickly and completely. A user with the **Employee self-service** role has an active status but is blocked from accessing **Exact Synergy Enterprise**. When the user logs in to **Exact Synergy Enterprise**, the user will be redirected to a simplified interface.

**Request types allowed for CRM role user section**

Request types allowed for CRM role user		
Request type: 1	6000	Campaign planning
Request type: 2	6001	Complaint
Request type: 3	6002	Customer satisfaction
Request type: 4	6003	Service question
Request type: 5	6004	Telephone note
Request type: 6	6005	Information request
Request type: 7	6006	Qualify
Request type: 8	6007	Quote
Request type: 9	6008	Close
Request type: 10	6009	Analyze needs
Request type: 11	9008	Travel booking request
Request type: 12	6013	Installation service order
Request type: 13	6012	Service order
Request type: 14		
Request type: 15		

**Request type: 1-15**

Type or select the request type ID to define the request types that a person with the **CRM** role can create. You can define up to 15 request types. Users with the **CRM** role are not able to create or participate in request types that are not specified in this section.

**Visible projects for users with the CRM role section**

Visible projects for users with the CRM role
Show: <input type="text" value="My projects"/> ▼

**Show**

Select the types of projects to be visible for users with the **CRM** role.

### 4.3.2 Creating default work schedule

In the **HRM** module, absences are calculated based on the work schedule of the employee. Schedules can either be created for individual employee or for the entire organization. The schedule for the entire organization or the default schedule applies to every person who does not have a personal schedule or whose division is without a work schedule.

To maintain the default work schedule, function right **100 - Maintain default work schedule** is required. Users with the **HR** role have this function right.

#### To create default work schedule:

1. Go to Modules → HRM → Setup → Schedules → Default work schedule, click the **Default work schedule (Corporate)** link, and then click **Edit**. You will see the following page:

HRM: Default work schedule (Corporate) 📄 ☆ ?

X Close Save Calculate

Number of days

**Work schedule**

Day	Day type	Hours	Hours
1	Normal ▼	09:00 - 13:00	13:30 - 17:00
2	Normal ▼	09:00 - 13:00	13:30 - 17:00
3	Normal ▼	09:00 - 13:00	13:30 - 17:00
4	Normal ▼	09:00 - 13:00	13:30 - 17:00
5	Normal ▼	09:00 - 13:00	13:30 - 17:00
6	Day off ▼	00:00 - 00:00	00:00 - 00:00
7	Rest day ▼	00:00 - 00:00	00:00 - 00:00
<b>Total</b>			37.50

2. At **Number of days**, type the total number of days to be in the work schedule. Depending on the number, you will see the number of days displayed in the **Day** column in the work schedule.

#### Note:

This field is available only if the **Activate: Advanced Work Schedules** check box has been selected under the **Person: Planning** section on the **HRM: Settings** page.

3. Under the **Work schedule** section in the **Day type** column, select **Normal**, **Off day**, or **Rest day** to define the day type for each day. **Normal** refers to a work day and **Off day** refers to a non-work day, which can be on any day of the week. Meanwhile, **Rest day** refers to a fixed and designated non-work day by the country or company where the employee does not work.
4. Type the range of work hours before and after a break in the **Hours** columns.
5. Click **Calculate** to calculate the total work hours after you have defined all the work hours for each day in the work schedule. The number of total hours will be displayed at the **Total** row.
6. Click **Save** to save the default work schedule.

### 4.3.3 Creating work schedules for divisions

Besides having a corporate level default work schedule, specific schedules can be set for different divisions. The division work schedule applies to all within that division who are without personal work schedules defined.

To create and maintain work schedules of divisions, function right **101 - Maintain company work schedule** is required. Users with the **HR** role have this function right.

#### To create work schedules for divisions:

1. Go to Modules → HRM → Setup → Schedules → Default work schedule, and then click **New**. You will see the following page:

HRM: Work schedule

Division

Number of days

Work schedule

Day	Day type	Hours	Hours
1	Normal	00:00 - 00:00	00:00 - 00:00
2	Normal	00:00 - 00:00	00:00 - 00:00
3	Normal	00:00 - 00:00	00:00 - 00:00
4	Normal	00:00 - 00:00	00:00 - 00:00
5	Normal	00:00 - 00:00	00:00 - 00:00
6	Normal	00:00 - 00:00	00:00 - 00:00
7	Normal	00:00 - 00:00	00:00 - 00:00
<b>Total</b>			0.00

Absence

Hours per day

Calculation - Entitlements:  Automatically

2. At **Division**, type or select the division to specify the division the work schedule belongs to.
3. Type the total number of days for the work schedule at **Number of days**. The maximum number that is acceptable is 99.

#### Note:

This field is available only if you have selected the **Activate: Advanced Work Schedules** check box under the **Person: Planning** section on the **HRM: Settings** page.

4. Under the **Work schedule** section in the **Day type** column, select **Normal**, **Off day**, or **Rest day** to define the day type for each day.
5. **Normal** refers to work days, while **Off day** and **Rest day** refer to non-work days. Type the range of work hours before and after a break in the **Hours** columns.
6. Click **Calculate** to calculate the total work hours after you have defined all the work hours for each day in the work schedule. The number of total hours will be displayed at the **Total** row.
7. Under the **Absence** section, type the total number of work hours per day at **Hours per day**.

8. Select **Calculation – Entitlements: Automatically** check box if you want the calculation of the entitlements for the division to be generated automatically every period. Otherwise, clear this check box.

**Note:**

- This check box is available only if you have selected **Divisions (Settings)** at the **Calculation - Entitlements: Automatically** field under the **Absence** section on the **HRM: Settings** page.
- All fields with the “!” icon are mandatory.

9. Click **Save** to save the default work schedule for the division.

### 4.3.4 Setting up job system

The setup of the job system focuses on the professions within an organization. The job system is used to define the functional area that the employees are working in, for example, management, sales, or consultancy staff. The job system is also used to indicate the level on which the employees are performing their tasks and responsibilities.

One of the main purposes of defining a job system is to have the ability to measure the performances of the employees working in an organization. A well-defined job system will indirectly result in an organization-wide quality improvement.

The job system within Exact Synergy Enterprise is concentrated on people and consists of the following elements: job groups, job activities, job titles, and job levels.

This subchapter explains the procedures to create job groups, job activities, and job titles.

### Creating job groups

The first level of the job system is a job group. It provides a general description of the job profession and defines the functional area of an organization that the person is working in. Examples include “Sales and Marketing” and “Research and Development”.

By default, some job groups are created once you have installed Exact Synergy Enterprise. You can access them at Modules → HRM → Setup → General → Job groups. You can also create more job groups if required.

To create and maintain job groups, function right **94 - Maintain job groups** is required. Users with the **HR** role have this function right.

#### To create job groups:

1. Go to Modules → HRM → Setup → General → Job groups, and then click **New**. You will see the following page:

2. Under the **General** section at **Code**, type a code of up to 10 characters for the job group. This cannot be changed after you have saved the job group.
3. At **Description**, type the description of the job group.

- After filling in other relevant details, click **Save** to save the new job group, or click **Close** to exit.

**Note:**

All fields with the “!” icon are mandatory.

## Creating job activities

A job activity is at the second level of the job system. It contains further information of a job group. Thus, it is advisable to link a job activity to a job group. For example, the job group “Research and Development” can consist of job activities, such as “Software Development” and “Quality Assurance”.

By default, some job activities are created once you have installed Exact Synergy Enterprise. You can access them at Modules → HRM → Setup → General → Job activities. You can also create more job activities if required.

To create and maintain job activities, function right **94 - Maintain job groups** is required. Users with the **HR** role have this function right.

### To create job activities:

- Go to Modules → HRM → Setup → General → Job activities, and then click **New**. You will see the following page:

HRM: Job activity - New

Close Save Save + New

General Remark

Code !

Description !

Job group

Document

Used in: Job titles

Competency	
Analyzing	<input type="checkbox"/>
Building client/partner relationship	<input type="checkbox"/>
Coaching	<input type="checkbox"/>
Entrepreneurship	<input type="checkbox"/>
Focusing on results (productivity)	<input type="checkbox"/>
Influencing & Negotiating	<input type="checkbox"/>
Leading people	<input type="checkbox"/>
Communication	<input type="checkbox"/>

- Under the **General** section at **Code**, type a code of up to 10 characters for the job activity. This cannot be changed after you have saved the job activity.
- At **Description**, type the description of the job activity.

4. Type or select the job group code to link the job activity to the selected job group at **Job group**.
5. Under the **Used in: Job titles** section, select the check boxes next to the respective competency to specify the competencies that are important to perform the job activity.

**Note:**

Knowing the importance of the competencies for each job activity allows reviewers to assign the appropriate final ratings for people belonging to this job activity based on their performances. This section is available only if the competency method is defined as **Simple** at Modules → HRM → Setup → General → Settings, under the **Competency** section.

6. After filling in other relevant details, click **Save** to save the new job activity, or click **Close** to exit.

**Note:**

All fields with the “!” icon are mandatory.

## Creating job titles

A job title is at the third level of the job system. It contains further information about a job activity and describes the job description. Thus, it is advisable to link a job title to a job activity. For example, the job title “Software Engineer” can be linked to the job activity “Software Development”, which is linked to the “Research and Development” job group.

By default, some job titles are created once you have installed Exact Synergy Enterprise. You can access them at Modules → HRM → Setup → General → Job titles. You can also create more job titles if required.

To create or maintain job titles, function right **96 - Maintain job titles** is required. Users with the **HR** role have this function right.

### To create job titles:

1. Go to Modules → HRM → Setup → General → Job titles, and then click **New**. You will see the following page:

2. Under the **Criteria** section at **Code**, type a code of up to 12 characters for the job title. This cannot be changed after you have saved the job title.
3. At **Description**, type a description for the job activity.
4. Next at **Activity**, type or select the job activity code to link the job title to the selected job activity.

5. Type a number or range of numbers at **Job level** to define the job level(s) for the job title.

**Note:**

A job level is used to represent the hierarchical level in an organization and as the basis to determine the salary range.

6. At **Security level**, type a number to specify the security level of the job title.

**Note:**

This can be used to determine the documents that employees with this job title can view. When an employee is assigned to a particular job title, the security level of the employee will automatically be filled in with the value defined at this field.

7. At **Policy**, select a policy that you want to link to the job title.
8. After filling in other relevant details, click **Save** to save the new job activity, or click **Close** to exit.

**Note:**

All fields with the “!” icon are mandatory.



### 4.3.5 Creating entries for employees

In order to gain access to Exact Synergy Enterprise, the details of all new employees must first be created in the system. There are two ways of creating an entry for an employee in Exact Synergy Enterprise. The first way is via the applicant process. This means a person starts out with the “applicant” status and is linked to a vacancy. When the applicant is hired by your organization, you can turn the status of the applicant to an employee, a student, contractor, or temporary. The other way is by directly creating the entries without going through the applicant process.

To create and maintain entries for people, function right **147 - Maintain resource card** is required. Users with the **HR** and **HR assistant** roles have this function right.

#### To create entries for people:

1. Go to Modules → HRM → Entry → HRM → Person. Alternatively, go to Modules → HRM → Reports → People → People, and then click **New**. You will see the following page:

HRM: Person - New

Created by Jo-Anna Goh Li Ping 05-12-2016 09:34

Summary

ID: 300806

First name

Middle name

Last name

Suffix

Maiden name

Job title: PROC MAN Senior Documentation Staff

Division: 036 Exact Asia Development

Phone / Extension

Mobile / Mobile extension

E-mail

General

User name

Title / Initials

Gender: Male

Language: EN English

Nationality

Place of birth / Date of birth

Marital status / Marital status date: Single

Secure user name

Organization

Job level: 13

Security level: 13 (Default: Level 13)

Manager: 30320 Seow Yung Gan

Assistant

Cost center: 036CO001 Contractor - Globe

Cost unit

Focus

Purchase limit EUR: 0.00

Personal

Address 1

Address 2

Number / Zip code

City

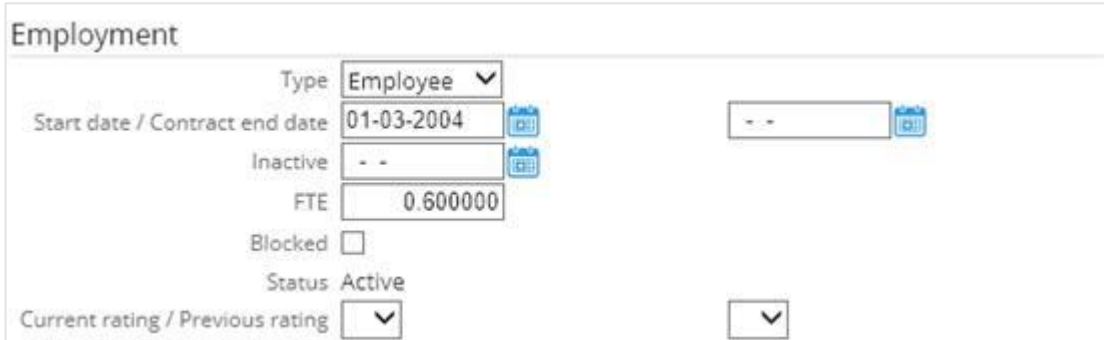
State

2. Under the **Summary** section at **ID**, type a number of up to nine digits to specify the ID for the person. This cannot be changed once you have saved the entry.
3. At **Last name**, type the last name of the person.

- Under the **General** section at **User name**, type a user name of up to 20 characters for the person. This cannot be changed once you have saved the entry.

**Note:**

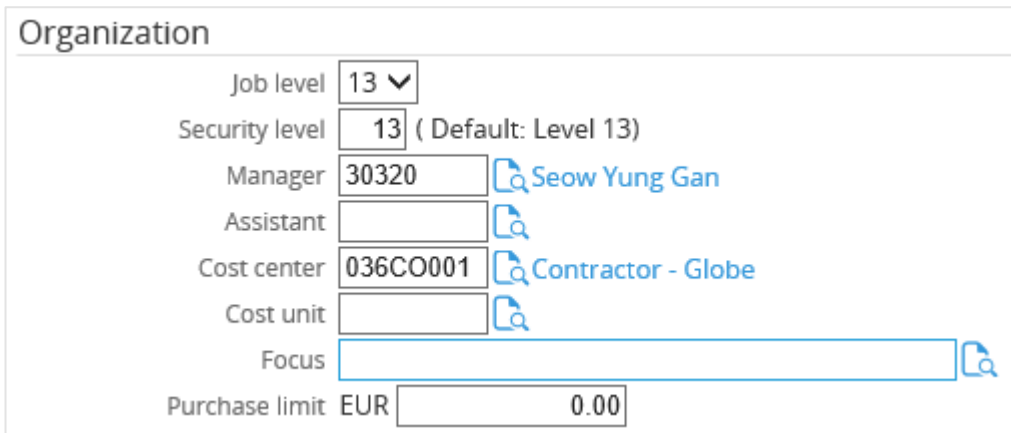
This user name will be used to log in to Exact Synergy Enterprise.



The screenshot shows the 'Employment' section of a form. It contains the following fields and values:

- Type: Employee (dropdown menu)
- Start date / Contract end date: 01-03-2004 (calendar icon)
- Inactive: -- (calendar icon)
- FTE: 0.600000
- Blocked:
- Status: Active
- Current rating / Previous rating: (dropdown menu)

- Under the **Employment** section at **Type**, select **Contractor**, **Employee**, **Student**, or **Temporary** to specify the employment type of the person. By default, **Employee** is selected.
- At **Start date**, type or select the date that the person will begin working for the organization. By default, the system-generated date will be filled in.
- Next at **FTE**, type a number to define the Full Time Equivalent (FTE) of the person. By default, **1.000000** is filled in, which indicates that the person will work full-time. A person who works part-time will have a pro-rated FTE.



The screenshot shows the 'Organization' section of a form. It contains the following fields and values:

- Job level: 13 (dropdown menu)
- Security level: 13 (Default: Level 13)
- Manager: 30320 (Seow Yung Gan)
- Assistant: (empty)
- Cost center: 036CO001 (Contractor - Globe)
- Cost unit: (empty)
- Focus: (empty)
- Purchase limit: EUR 0.00

- Under the **Organization** section at **Job level**, select a job level for the person.
- At **Security level**, type the security level of the person.

**Note:**

By default, the value filled in is similar to the security level defined for the job title. For more information, see *Creating job titles at 4.3.4 Setting up job system*.




- Type or select an ID at **Manager** to define the manager of the person.

**Note:**

By default, the manager of the user who is creating the entry will automatically be filled in.

11. At **Cost center**, type or select the cost center code to define the cost center of the person.

### Office

Fax	<input type="text"/>
Skype ID	<input type="text"/>
MSN ID	<input type="text"/>
Contractual location	<input type="text"/> 
Physical location / Room	<input type="text"/>  <input type="text"/>
Time zone	21  (GMT+08:00) Kuala Lumpur, Singapore
IP Address	<input type="text"/>
ISP Account	<input type="text"/>
Synchronize calendar	<input type="checkbox"/>

12. Under the **Office** section at **Time zone**, type or select the time zone ID to specify the time zone of the office that the person is working in.

13. After filling in other relevant details, click **Save** to save the entry, or click **Close** to exit.

**Note:**

- Entries created can be retrieved by going to Modules → HRM → Reports → People → Search, defining the criteria, and then clicking **Show** to display the list of people. Next, click the name of the person.
- All fields with the “!” icon are mandatory.

## 4.4 CRM SETTINGS

The **Customers** module in Exact Synergy Enterprise is used to store and share with people the information pertaining to customer relationship management (CRM). The following page shows information of the CRM settings already defined when you set up a company in Exact Synergy Enterprise. You can view the information by going to Modules → System → Setup → Database → Set up company under the **CRM** section.

To define CRM settings, function right **222 - Maintain CRM settings** is required. Users with the **Administrator and Customer manager** roles have this function right.

CRM			
Settings	Value	Status	Mandatory
Sectors	<a href="#">12</a>	Open	Yes
Sizes: Division	<a href="#">11</a>	Open	Yes
Show: Warning	<a href="#">Check</a>	Done	Yes
Division: Default	<a href="#">Check</a>	Done	Yes
Mail merge	<a href="#">Check</a>	Done	Yes
Customer	<a href="#">Check</a>	Done	Yes
Classifications	<a href="#">6</a>	Done	Yes

### Sectors

The number displayed in the **Value** column indicates the number of sectors created in the system. Click the number hyperlink and you will see the **General: List - Sectors** page where you can see the overview of sectors and create sectors. For more information, see *4.4.1 Creating sectors*.

### Sizes: Division

The number displayed in the **Value** column indicates the number of account sizes created in the system. Click the number hyperlink and you will see the **General: List - Sizes** page where you can see the overview of sizes and create sizes. For more information, see *4.4.2 Creating account sizes*.

### Show: Warning

Click the **Check** hyperlink in the **Value** column and you can view or edit the account settings on the **Accounts: Settings** page with regard to enabling or disabling warning messages for accounts and contacts. For more information, see *4.4.4 Enabling or disabling show warning functionality*.

### Division: Default

Click the **Check** hyperlink in the **Value** column and you can view or edit the account settings on the **Accounts: Settings** page with regard to setting the default division. For more information, see *4.4.5 Defining default division*.

### Mail merge

Click the **Check** hyperlink in the **Value** column and you can view or edit the account settings on the **Accounts: Settings** page with regard to defining the mail merge layout settings. For more information, see *4.4.6 Defining mail merge settings*.

### Customer

Click the **Check** hyperlink in the **Value** column and you can view or edit the account settings on the **Accounts: Settings** page with regards to:

- assigning specific function rights to create accounts. For more information, see *4.4.3 Assigning specific function rights to create accounts*.
- enabling or disabling mandatory contracts for customers. If you enable the function, your accounts must have contracts in order to be listed as customers. For more information, see *4.4.7 Defining settings for status promotion of accounts*.

### Classifications

The number displayed indicates the number of classifications created in the system. Click the number hyperlink and you will see the **General: List - Classifications** page where you can see the overview of classifications and create classifications. For more information, see *4.4.8 Creating classifications*.

### 4.4.1 Creating sectors

In **Customers**, a prospect, lead customer, reseller, or supplier is defined as an account. These accounts can be segmented into sectors based on the industries the accounts are involved in. Segmentation into sectors allows specific marketing activities to be targeted to these sectors. For example, a special sales promotion on an industry-related product may apply to accounts in a particular sector but not to others. After a sector has been created, it can still be deleted if it does not contain any accounts. Otherwise, you cannot delete it. Once the sectors are created, they can be used to categorize your accounts.

To create and maintain sectors, function right **305 - Maintain sectors and subsectors** is required. Users with the **Customer manager** role have this function right.

#### To create sectors:

1. Go to Modules → Marketing → Setup → General → Sectors, and then click **New**. You will see the following page:

2. Under the **Sector** section, type a unique code and a suitable description for the new sector at **Code** and **Description** respectively.
3. Select a policy for your sector at **Policy**.
4. Finally, click **Save** to save the new sector, which will be displayed in the list of available sectors, or **Close** to exit.

#### Note:

All fields with the “!” icon are mandatory.

## 4.4.2 Creating account sizes

Exact Synergy Enterprise allows you to categorize your accounts based on the size of the organization (numbers of employee). Hence, you should create the account sizes before you use them to group the accounts.

To create and maintain account sizes, function right **119 - Maintain company size** is required. Users with the **Administrator** role have this function right.

### To create account sizes:

1. Go to Modules → Marketing → Setup → General → Sizes, and then click **New**. You will see the following page:

General: New - Size ☆ ?

Close Save Save + New Created by Jo-Anna Goh Li Ping 01-09-2016 11:27

Size

Code  !

Description  !

2. Under the **Size** section, type a unique code and a suitable description for the new account size at **Code** and **Description** respectively.
3. Finally, click **Save** to save the new account size, which will be displayed in the list of available sizes, or **Close** to exit.

### Note:

All fields with the “!” icon are mandatory.

### 4.4.3 Assigning specific function rights to create accounts

Exact Synergy Enterprise allows you to assign specific function rights to create accounts. You can manage who has the rights to create accounts. For example, you can define that a sales representative can create a prospect. However, the account is created by a sales manager.

To assign specific function rights to create accounts, function right **222 - Maintain CRM settings** is required. Users with the **Administrator** and **Customer manager** roles have this function right.

#### To assign specific function rights to create accounts:

1. Go to Modules → Customers → Setup → Other → Settings, and then click **Edit**. You will see the following page:

Security settings for creating new account	
Prospect (Company)	<input type="text"/>
Prospect (Person)	<input type="text"/>
Customer (Company)	<input type="text"/>
Customer (Person)	<input type="text"/>
Associate	<input type="text"/>
Supplier (Company)	<input type="text"/>
Supplier (Person)	<input type="text"/>
Reseller	<input type="text"/>
Division	<input type="text"/>
Bank	<input type="text"/>
Lead	1  Create all request types, irrespective of request-type definition
Suspect	<input type="text"/>
Not validated	2  Edit all open requests

2. Under the **Security settings for creating new account** section, define the fields or click to select a specific function right to each account type.
3. Click **Save**, and then **Close** to exit.



#### 4.4.4 Enabling or disabling show warning functionality

By default, a warning will be displayed when opening an account card or a contact card which is blocked, passive, or inactive. This warning reminds you that no service should be given to the account.

**To disable the show warning functionality:**

1. Go to Modules → Customers → Setup → Other → Settings, and then click **Edit**.

User
Disable: Account - Warning Pop-up <input type="checkbox"/>
Disable: Contact - Warning Pop-up <input type="checkbox"/>



2. Under the User section, select the **Disable: Account - Warning pop-up** and **Disable: Contact - Warning pop-up** check boxes.
3. Click **Save** to save the settings.

### 4.4.5 Defining default division

Every account has to link to a division. Hence, you can define a default division which the accounts will be linked to by default when you create the accounts.

**To define the default division:**

1. Go to Modules → Customers → Setup → Other → Settings, and then click **Edit**.
2. Under the **Division** section at **Default**, type or select the default division.

Division	
Default	602  MacBean CoffeeWorld
Account code from	Exact Globe Next 

3. Click **Save** to save the settings.

#### 4.4.6 Defining mail merge settings

You can perform mail merges to send mails to your accounts via Exact Synergy Enterprise. In line with this functionality, you should define the mail merge settings.





**Note:**

From product update 250 onwards, the mail merge settings will not be available. The **Word Merge** feature has replaced the mail merge functionality.

Existing customers moving to product update 250 will still have the old mail merge functionality by default, and this can be switched easily to the new **Word Merge** functionality. When the **New Word Merge** check box under the **Word Merge** section is selected, the **Mail merge: Layouts** section will not be displayed. **Word Merge** will replace the mail merge functionality. You will be able to create letters and e-mails directly from the account cards, contact cards, personal cards, project cards, request pages, and new document pages. For more information, see the **Word Merge** section at 4.6.2 *Defining document settings* and the **Customers User Guide** for Exact Synergy Enterprise.

**To define mail merge settings:**

1. Go to Modules → Customers → Setup → Other → Settings, and then click **Edit**.

Mail merge: Layouts	
Label	 
Requests	 

2. Under the **Mail merge: Layouts** section, select a default label which will be used for the mail merge at **Label**.
3. At **Requests**, select a default mail merge layout which will be used in the account card.

E-mail	
Sender (Default)	<input type="text" value="e-Mail address of the default sender"/>
Name (Default)	<input type="text" value="Fullname of the default sender"/>

4. Under the **E-mail** section, type the default e-mail address of the sender for mail merge in the account card at **Sender (Default)** and the default sender's name at **Name (Default)**.
5. Click **Save** to save the settings.

**Note:**

All fields with the “!” icon are mandatory.

#### 4.4.7 Defining settings for status promotion of accounts

Exact Synergy Enterprise allows you to define the prerequisites in promoting the status of an account. For example, you can specify that a sales order must be created from an account in order to be promoted to a customer status. Likewise, the prerequisites to promote an account to a prospect status can be a request for a quotation. Policies defining these prerequisites can be attached to the respective account types for reference. You can define these on the **Accounts: Settings** page.

##### To define settings for status promotion of accounts:

1. Go to Modules → Customers → Setup → Other → Settings, and then click **Edit**.

Customer
Mandatory: Contract <input type="checkbox"/>

2. Under the **Customer** section, select the **Mandatory: Contract** check box to disallow customer accounts to be created directly. Instead, prospect accounts can be promoted to customer accounts if there is a debtor number and a valid contract.

Policy	
Prospect (Company)	00.002.148 - Creating a prospect: Definition and policy
Prospect (Person)	
Customer (Company)	
Customer (Person)	
Reseller	
Supplier (Company)	
Supplier (Person)	
Associate	
Bank	
Division	
Not validated	
Lead	
Suspect	

3. Under the **Policy** section, you can select a policy document for each account type. For example, you can select a policy document at **Prospect (Company)**, which will list the conditions and processes required to create prospects.
4. Click **Save** to save the settings.

#### 4.4.8 Creating classifications

Meanwhile, the system also supports the classification of accounts based on the business structural sizes to facilitate account segmentation for marketing purposes. For example, corporate-, small- and medium-sized accounts can be grouped accordingly in Exact Synergy Enterprise. You need to create the classifications to categorize your accounts.

To create and maintain classifications, function right **319 - Maintain classifications** is required. Users with the **Customer manager** role have this function right.

##### To create classifications:

1. Go to Modules → Marketing → Setup → General → Classifications, and then click **New**. You will see the following page:

2. Under the **Classifications** section, type a unique ID and a suitable description at **ID** and **Description** respectively to identify the classification.
3. At **Type**, select the new classification type. The classification type can be used to indicate the type of account that is allowed to use the classification. For example, if you select **Customer** at **Type**, this classification can only be linked when the account type is **Customer**.
4. Next, type a number for the order of the classification within the list of classifications at **Order**. This is useful if you want to list the classifications in the order of importance.
5. Select a policy for the classification at **Policy**.
6. Finally, click **Save** to save the new classification, which will be displayed in the list of available classifications, or **Close** to exit.

##### Note:

All fields with the "!" icon are mandatory.

## 4.5 SETTING UP CUSTOMER OR RESELLER PORTALS

To improve the efficiency of the business process, customers and resellers should be given access to appropriate portals where they can access the product and marketing information as well as their account information readily. They can even create documents, requests, and orders through the customer and reseller portals which are also accessible by your company. Hence, your company can also process the documents, requests, and orders immediately, thereby shortening the communication time considerably. To view the information of the customer or reseller portal settings, go to the **Customer portal / Reseller portal** section via Modules → System → Setup → Database → Set up company. See the following page:

Customer portal / Reseller portal			
Settings	Value	Status	Mandatory
Mail merge	<a href="#">Check</a>	Done	Yes
Portal: Path	<a href="#">Check</a>	Done	Yes

### Mail merge

Click the **Check** hyperlink in the **Value** column and you can view or edit the account settings on the **Accounts: Settings** page with regard to defining the mail merge settings. For more information, see *4.4.6 Defining mail merge settings*.

### Portal: Path

Click the **Check** hyperlink in the **Value** column and you can view or edit the account settings on the **Accounts: Settings** page with regard to defining the portal paths for the customer and reseller portals. For more information, see *4.5.1 Defining portal paths*.

### 4.5.1 Defining portal paths

You can define the portal paths for the customer portal and reseller portal when you define your account settings. These links will enable you to log on to the portals via the hyperlink in **CRMQuestionnaire.aspx** (entry form for new accounts and requests). You can also log on to the e-mail facility after access to the portal has been granted.

#### To define the portal paths:

1. Go to Modules → System → Setup → Database → Set up company.
2. Under the **Customer portal / Reseller portal** section, click **Check** in the **Value** column at **Portal: Path**. Next, click **Edit** on the **Accounts: Settings** page. Alternatively, go to Modules → Customers → Setup → Other → Settings, and then click **Edit**.

Server	
Customer portal	<input type="text" value="https://customer.macbean.com"/>
Path	<input type="text" value="/docs/"/>
Reseller portal	<input type="text" value="https://customer.macbean.com"/>
Path	<input type="text" value="/docs/"/>
Public	<input type="text" value="www.macbean.com"/>
Path	<input type="text" value="/docs/"/>
Directory: vCard - Path (Complete)	<input type="text"/>

3. Under the **Server** section, at **Customer portal**, **Reseller portal**, and **Public**, type the respective portal address for the customers, resellers, and public to log on to the relevant portals.
4. For each portal address you have defined for the customers, resellers, and the public, type the path where the ASPX files will be stored at **Path**.
5. Click **Save** to save the settings.

## 4.6 DOCUMENT SETTINGS

Exact Synergy Enterprise stores all created documents in one centralized database. The following page shows the information of the document settings already defined when you set up a company in the system. You can view the information via Modules → System → Setup → Database → Set up company under the **Documents** section.

Documents			
Settings	Value	Status	Mandatory
Type	<a href="#">179</a>	Done	Yes
Settings	<a href="#">Check</a>	Done	Yes
Layouts: Frontpage	<a href="#">18</a>	Done	Yes

### Categories

The number displayed in the **Value** column indicates the number of document categories created in the system. Click the number hyperlink and you will see the **Documents: Categories** page where you can view all the available document categories and create document categories. For more information, see *Appendix 10 Document Categories*.

### Settings

Click the **Check** hyperlink in the **Value** column and you can view or edit the document settings on the **Documents: Settings** page. For more information, see *4.6.2 Defining document settings*.

### Layouts: Frontpage

The number displayed in the **Value** column indicates the number of **Frontpage** layouts created in the system. Click the number hyperlink and you will see the **Layouts: Frontpage** page where you can view all the available **Frontpage** layouts and create **Frontpage** layouts. For more information, see *4.6.3 Creating Frontpage layouts*.




## 4.6.1 Creating document types

Documents are a source of information that needs to be managed for easy creation, retrieval, and accountability. Also, document features are well-integrated with other functions within the application. You can define the properties or attributes of the documents in the settings for document types.

To create and modify document types, function right **361 — Maintain Document Type** is required. Users with the **Documents administrator** role have this function right. However, a person defined at **Manager** under the **General** tab under the **General** section as described in the following section “To create document types” can also modify the document type definition.

### To create document types:

1. Go to Modules → Documents → Setup → Maintenance → Document: Types, and then click **New**. You will see the following page:

2. Under the **General** tab, click  at **Document Group** under the **General** section to select a document group that will group this document type.
3. At **Description**, fill in the description of the document type.
4. Next at **Active**, select or clear this check box to activate or deactivate this document type respectively. A deactivated document type cannot be used to create documents.

#### Note:

This check box will be selected and disabled if the **System: Type** check box is selected under the **Document** section under the **More properties** tab.

- At **Security level** under the **Creator** section, select a security level or type a security level number to allow only document creators with the security level clearance above this security level to create a document of this type. This setting overrides the **Security level** setting in the subcategory of documents of this type.

The screenshot shows the 'Documents: New - Type' configuration page. At the top, there are buttons for 'Close', 'Save', and 'Save + New'. The page is created by Angel Chan on 18-04-2016 at 09:22. The 'Share' tab is selected, showing options for 'General', 'Synergy links', 'Publish', 'Share', and 'More properties'. There is a checkbox for 'Allow scripting'. The 'Rights' section includes 'Edit' (Yes), 'Edit rights' (Creator / Owner), and 'View rights' (dropdown). The 'Security level' section has 'From' and 'To' both set to 'Internal' with a value of '10'. The 'Check in / Check out' section has a checkbox for 'Check in / Check out' and a text input for 'Number of days for check-out' set to '0'. The 'Archiving' section has a text input for 'Scheduled for archiving' set to '0' and a dropdown for 'Days' set to 'after creation'.

- You can limit the rights to edit and view documents to people from specific groups at document type level. At **Edit** under the **Share** tab under the **Rights** section, select the required type of editing right based on the following:
  - Yes** — Documents of this type can be modified by the document creator, owners, and approvers. Select this option to activate the **Check in/Check out** check box under the **Check in/Check out** section.
  - No** — Documents of this type cannot be modified by anyone except the document administrator if the document is in the **Approved** status. The document can still be modified in the **Draft**, **Open**, or **Rejected** status.
  - No, only creator** — Documents of this type can be modified only by the document creator once the document is in the **Approved** status.
  - No, only approver** — Documents of this type can be modified only by the document approver once the document is in the **Approved** status. To use this option, the **Use** check box under the **Approve** section under the **Publish** tab must be selected.

**Note:**

If you are viewing this page in the **Standard** mode for document structure, the **Edit rights** section is separated from the **View rights** section, which works just the same, as in the **Classic** mode. To check the document structure mode of the current settings, go to Modules → Documents → Setup → Maintenance → Settings.

- Under the **Share** tab under the **Check in / Check out** section, select the **Check in / Check out** check box to allow this type of documents to be modified by one person at a time for multi-owner documents. When one of the document owners saves a document, the document is considered as checked out. The same owner who has checked out the document must click **Check In** in the document editor or viewer before other owners of the document can modify the document. A document administrator can check in any document regardless of the checked out status or document ownership.
- At **Numbers of days for check-out** check box, type a value to specify the number of days that the document of this type can be checked out.

9. Finally, click **Save** to save the document type and its settings.

**Note:**

All fields with the “!” icon are mandatory.

## 4.6.2 Defining document settings

Document settings affect document-related functionalities in the system. For example, the settings determine the size of pictures added to documents, whether the creator must select a document type when creating a document, and whether pictures for **Frontpages** can be resized. To define document settings, go to Modules → Documents → Setup → Maintenance → Settings.

To maintain the standard document settings, function right **269 - Maintain standard settings for documents** is required. Users with the **Documents administrator** and **Web administrator** roles have this function right.

### Frontpages section

Frontpages	
City	<input type="text"/>
Picture Maximum	<input type="text" value="10,000,000"/> Bytes
Width	<input type="text" value="0"/> Pixels
Height	<input type="text" value="0"/> Pixels
Resize	<input type="text" value="No"/> ▼

#### City

Type a city to be displayed on the **Frontpage**.

#### Picture

Type the maximum size of a picture that is allowed to be attached to a **Frontpage**.

#### Width

Type a fixed width for the picture on the **Frontpage**.

#### Height










Type a fixed height for the picture on the **Frontpage**.

## Resize

Select the required option whether the picture can be resized on the **Frontpage**. There are four available options:

- **No** — The picture cannot be resized.
- **Yes (Standard)** — The picture can be resized to the size specified at **Height** and **Width**.
- **Yes (Smaller)** — The picture can be resized if it is smaller than the size specified at **Height** and **Width**.
- **Yes (Bigger)** — The picture can be resized if it is bigger than the size specified at **Height** and **Width**.

## Default: Frontpages section

Default: Frontpages		
Documents	DOC	 Documents
HRM	HRM	 Employees
Financial	FIN	 Financials
Logistics	LOG	 Logistics
Customers	CRM	 Customers
Workflow	PROC	 Procurement
Projects	PROJ	 Projects
Assets	DEFAULT	 Default
Others		

## Documents/HRM/Financial/Logistics/Customers/Workflow/Projects/Assets/Others

Type or select the default **Frontpage** layout for the respective news pages at **Documents**, **HRM**, **Financial**, **Logistics**, **Customers**, **Workflow**, **Project**, and **Assets**.

## Forum: Links section

Forum: Links		<a href="#">Add</a>
Description	URL	

You can set up links using the forum feature. Click **Add** to specify a link. After specifying a link description and URL, you will be able to see the link in the **Description** column under the **Links** section.

## Word Merge section

**Word Merge**

Label: Accounts 

New Word Merge

Reference number  x

This section defines the default label used in communications with your various accounts (customers, suppliers, and associates). It also allows you the option to activate and use the new **Word Merge** feature, which offers a wide range of improvements from the mail merge functionality.

### Label: Accounts

Select a label to be used as the default mail merge layout for an account. The defined label will be used for communications with the accounts. For example, if you click **Label** on an account card, this layout is used.

**Note:**

This option is available only if the **New Word Merge** check box is not selected.

### New Word Merge

- The **Reference number** field will be displayed on the **Documents: Settings** page.
- On the **Account: Settings** page (go to Modules → Customers → Setup → Other → Settings), the following sections will be affected:
  - The **Mail merge: Layouts** section will not be displayed.
  - The Mail merge for customer portal: Document type section will not be displayed.
  - The Mail merge for reseller portal: Document type section will not be displayed.
  - The Word Merge settings for Customer Portal section will be displayed.
  - The Word Merge settings for Reseller Portal section will be displayed.
- The **Create letter** and **Create email** buttons will be displayed on the following cards and pages, depending on the merge process (single or bulk) that you are performing:
  - Account cards
  - Contact cards
  - Person cards
  - Project cards
  - Request page
  - Document: New page
  - Accounts search results page
  - Contacts search results page
  - Requests search results page
  - Person or people search results page
- The **Generate Quotation** button will be displayed on quotation cards, replacing **Open in MS Word**.
- The **Mail merge** button has been removed from the account cards, contact cards, person cards, request cards, and the **Document: New** page.

You will be able to create letters and e-mails directly from the account cards, contact cards, person cards, project cards, request cards, and the **Document: New** page. Furthermore, you can also create letters and e-mails on bulk processes directly based the accounts, contacts, requests, and person search results.

**Note:**


- Depending on the product update you are using, you may or may not use all of the features mentioned above.
- The new **Word Merge** functionality comes as a package in product update 250 which replaces the old mail merge functionality. For new customers, or when you are creating a database, the old mail merge functionality will no longer be available. No settings are required.
- Existing customers moving to product update 250 will still have the old mail merge functionality by default, and this can be switched easily to the new **Word Merge** functionality.

### Reference number

Type a number to be used as the reference number on letters and e-mails. This number must be an integer, positive, and less than 2,147,483,646. It increases when performing each merge and may increase multiple times when performing bulk merging processes.

This field can be used to create your templates.

### Documents section

Documents	
Picture: Width	<input type="text" value="0"/> Pixels
Layout	
Type: Mandatory	<input type="checkbox"/>
Tagging Maximum	<input type="text" value="100"/> Tags

#### Picture: Width

Type a fixed width for the document's picture.

#### Layout

Select a default layout for the document. This layout will be used for all documents created in the categories that do not have a specific layout defined.

#### Type: Mandatory

Select this check box to make it mandatory to select a document type when you create a document. You cannot save the document unless the document type is specified. If the check box is not selected, the documents can be saved without a document type defined.

### Tagging Maximum

Type the maximum number of tags that users are allowed to tag per document. The minimum number of tags per document is 1 and maximum is 999,999,999. By default, "100" is displayed.

### Website section

Website
Show: ID <input type="checkbox"/>

### Show: ID

Select this check box to display the document ID for documents that are published to the public in Exact Synergy Enterprise.

### Security section

Security
FDA (Security) <input checked="" type="checkbox"/>
Security statement 
URL FDA <input type="text"/>

### FDA (Security)

Select this check box to activate the FDA security function. When the FDA security function is activated, you will see a login page when you approve a document. You need to fill in a valid user name and password to continue with the secure approval. If the login is correct, you will see a page that displays the security statement and allows you to approve the document. After the document has been approved, you will see a page that confirms that the document has been approved. Click **Close** to exit.

### Security statement

Select a security statement that describes the security policy. This document will be displayed in the page after the user logs in during the security approval (if the user name and password is valid).

### URL FDA

Type the URL that will be used to redirect the approval to the virtual directory to enforce additional security feature.



## XML section

XML	
URL	<input type="text"/>

This section defines the URL for **Synergy Office Add-in** (Exact Synergy Enterprise integrated function with applications, such as Microsoft Word and Microsoft Outlook).

## URL

Type the URL address to link **Synergy Office Add-in** with Exact Synergy Enterprise. If the URL is not defined in the settings of **Synergy Office Add-in**, this URL will be used to link **Synergy Office Add-in** with Exact Synergy Enterprise. For more information, see *7.4 Microsoft Office Add-in (Registering the MSXML components)* and *7.4.2 Installing Microsoft Office Add-In*.

## Document structure section

Document structure	
Document structure	<input checked="" type="radio"/> Classic <input type="radio"/> Standard

## Document structure


Select the type of document structure to be displayed:

- **Classic** — Select this option to view the document structure in the **Classic** mode.
- **Standard** — Select this option to view the document structure in the **Standard** mode.

### Note:

This is enabled only if you are currently using the **Classic** mode. Once you have upgraded to the **Standard** mode, you will not be able to revert back to the **Classic** mode.

## Online help feedback template section

Online help feedback template	
Document	

## Document

Select a feedback form template for online help. When this section is defined correctly, a feedback form will be displayed at the bottom of an online help document to allow users the convenience of submitting feedback on how to improve the document. For example, users can press F1 or click the **Help** icon on all pages in Exact Synergy Enterprise to display the **System: Help** page.

### 4.6.3 Creating Frontpage layouts

Documents can be published as news messages on special news pages in Exact Synergy Enterprise. These news messages can be presented in a customized layout. For each news page, a separate layout can be created in addition to creating different layouts for divisions and for customers and resellers.

To create and maintain **Frontpage** layouts, function right **255 - Maintain News Layout** is required. Users with the **Documents administrator** and **Web administrator** roles have this function right.

#### To create Frontpage layouts:

1. Go to Modules → Documents → Setup → Layouts → Frontpage, and then click **New**. You will see the following page:

Layout: Frontpage

Close Save Save + New

Layout

Use Default Code

News

Division Description

Headlines Page size 8 Include: Picture

Frontpages Rows 10

Include: News Division Country Group

Active Picture Background

Documents

Header Editorial Footer Customize

Criteria

Example

Table	Prefixes
BacoDiscussions	bd

```
bd.JobLevel < 2 AND bd.company IN ('063','065')
bd.LanguageID = 'DE' AND bd.Assortment IN (15, 1, 12, 6)
```

2. Under the **Layout** section at **Use**, select **Default** or **Document** to create a **Frontpage** layout using the default options or by applying a pre-designed document.
3. At **Code**, type a code for the new **Frontpage** layout.
4. Under the **News** section, select the division at **Division** that will be using the **Frontpage** layout. Only employees linked to the selected division can use the **Frontpage** layout.
5. At **Description**, type the description for the **Frontpage**. This description will be visible when viewing the list of **Frontpage** layouts.
6. Select the **Headlines** check box to ensure that documents published as **Headlines** are visible on the **Frontpage** layout.
7. Type a number at **Page size** to set the number of news items to be displayed in the headlines section.
8. Select the **Include: Picture** check box to include any first picture found in the document to be displayed along with the headline.
9. Select the **Frontpages** check box to ensure that links to other **Frontpages** are visible on the **Frontpage** layout. This allows quick access to other **Frontpages**, if required.
10. Next, type a number at **Rows** to determine the maximum number of rows of news items that should be displayed on the **Frontpage**.

11. At **Include: News**, select the relevant check box to determine whether news from the **Division**, **Country**, or **Group** are included on the **Frontpage**. You can select more than one check box.

**Note:**

These check boxes are related to the **Criteria** section as explained in the following step 15. They are used as an “AND” relation.

12. Select the **Active** check box to activate the **Frontpage** layout. During the creation or modification of the **Frontpage**, the check box can be cleared to deactivate the layout to prevent the **Frontpage** from being used.
13. At **Picture**, select a default picture to be used for every news item if it does not have one.
14. Select a background picture to be used for the headlines section at **Background**. To do this, you must first ensure that a picture has already been uploaded into the system. This can be done via Modules → Documents → Setup → Maintenance → Pictures.
15. Under the **Documents** section, select a document for **Header**, **Editorial**, and/or **Footer** to be used in the corresponding parts of the **Frontpage** layout in order to customize the different parts of the document. Alternatively, you can also click **Customize** to customize the **Header** and **Footer** using HTML.

**Note:**

After the **Frontpage** layout has been saved, a **Customize** button will be displayed to allow you to edit the default **Header** and/or **Footer** parts in the HTML format when no document has been selected at **Header** and **Footer**. Under the **Criteria** section, type the criteria to filter the news items that will be displayed on the **Frontpage**. The criteria are stored as SQL statements in the documents table.

16. Click **Save** to save the **Frontpage** layout.

**Note:**

All fields with the “!” icon are mandatory.

## 4.7 LOGISTICS SETTINGS

Logistics allows the creation of a web shop where customers can view and buy items on the Internet. The best scenario in which to set up a web shop is an integrated scenario with Exact Globe Next. The following page shows the information of the logistics settings already defined when you set up a company in Exact Synergy Enterprise. You can view the information by going to Modules → System → Setup → Database → Set up company under the **Logistics** section.

Logistics			
Settings	Value	Status	Mandatory
Settings	<a href="#">Check</a>	Done	Yes
Assortment - Properties	<a href="#">Check</a>	Done	Yes
Assortments	<a href="#">111</a>	Done	Yes
Catalogs	<a href="#">18</a>	Done	Yes
Item: Relation types	<a href="#">33</a>	Done	Yes
Items	<a href="#">304991</a>	Done	Yes

### Settings

Click the **Check** hyperlink in the **Value** column and you will see the **Logistics: Settings** page where you can view and edit the logistics settings. For more information, see *4.7.1 Defining logistics settings*.

### Assortment – Properties

Click the **Check** hyperlink in the **Value** column and you will see the **Items: Assortment - Properties** page where you can create assortment properties. For more information, see *4.7.2 Creating assortment properties*.

### Assortments

The number displayed in the **Value** column indicates the number of assortments created in the system. Click the number hyperlink and you will see the **Assortments** page where you can view the available assortments and create assortments. For more information, see *4.7.3 Creating assortments*.

### Catalogs

The number displayed in the **Value** column indicates the number of catalogs created in the system. Click the number hyperlink and you will see the **Items: Catalogs** page where you can view the available catalogs and create catalogs. For more information, see *4.7.4 Catalogs*.

### Item: Relation types

The number displayed in the **Value** column indicates the number of item relation types created in the system. Click the number hyperlink and you will see the **Items: Relation types** page where you can view the available item relation types and create item relation types. For more information, see *4.7.5 Creating item relation types*.

## Items




The number displayed in the **Value** column indicates the number of items created in the system. Click the number hyperlink and you will see the **New: Item** page where you can view all the assortments available in the system. From this page, you can create items under specific assortments. For more information, see *4.7.6 Creating items*.

### 4.7.1 Defining logistics settings

When you define the logistics settings, you can set up the numbers used for creating sales orders, sales invoices, purchase orders, and contracts in Exact Synergy Enterprise. To define the logistics settings, go to Modules → Logistics → Setup → Settings → Settings.

To define the logistics settings, function right **15 - Maintain Item control settings** is required. Users with the **Item management** role have this function right.

## Logistics: Settings

X Close
Save

#### Sales orders

Number: Starts with

#### Sales invoices

Number Sequence number ▼

Number: Starts with

Group by: Invoice customer contact


#### Purchase orders

Number: Starts with

#### Contracts

Number Account: Division: Sequence number ▼

#### Warehouse

Default  

#### Sales orders section

##### Number: Starts with

Type a starting number for the sales order number. You can specify up to eight digits.

## Sales invoices section

### Number

Select the format of the invoice number for the sales invoices. There are five available format options:

- **Sequence number** — An automatically incremented invoice number.
- **Year: Sequence number** — The invoice number format starts with the year, followed by a sequential number. For example, 2005:0001.
- **Invoice code: Sequence number** — The invoice number format starts with the invoice code, followed by a sequential number. For example, 100:0001.
- **Year: Invoice code: Sequence number** — The invoice number format starts with the year, followed by the invoice code, and then a sequential number. For example, 2005:100:0001.
- **Invoice code: Year: Sequence number** — The invoice number format starts with the invoice code, followed by the year, and then a sequential number. For example, 100: 2005:0001.

### Number: Starts with

Type a starting number for the sales invoice number. You can specify up to eight digits.

### Group by: Invoice customer contact

Select this check box to group the related invoice requests based on the debtor contact person when you perform invoice request processing (click **Invoicing** at Modules → Logistics → Reports → Invoice → To be invoiced). By default, this check box is selected.

## Purchase orders section

### Number: Starts with

Type a starting number for the purchase order number.

## Contracts section

### Number

Select a numbering convention to be used by contracts. The following formats are available for contracts:

- **None** — This allows the contract number to be entered with any value and will not be generated by the system.
- **Sequence number** — This is an automatically incremented number.
- **Account: Sequence number** — The contract number starts with the account number, followed by a sequential number. For example, 1234:0001.
- **Account: Division: Sequence number** — The contract number starts with the account number, followed by the division number, and then a sequential number. For example, 1234:100:0001.

## Warehouse section

### Default

Select a default warehouse to be used for logistics operations.

## 4.7.2 Creating assortment properties

Assortment properties allow items to be categorized within an assortment based on different attributes. For example, when the assortment “Bicycles” is created, a color property can be added with the options red, blue, and yellow. Assortment properties allow for a narrower search when looking for items. There are only 10 assortment properties available, but an unlimited number of options can be created for each property.

To create and maintain assortment properties, function right **14 - Maintain Item assortment categories** is required. Users with the **Item management** role have this function right.

### To create assortment properties:

1. Go to Modules → Logistics → Setup → General → Assortment: Properties, and then click **New**.

2. Under the **General** section, type a unique property code for the assortment property at **Code**. If you are modifying an existing assortment property, this code cannot be changed.
3. At **Description**, type a description for the assortment property. The description will be displayed on the item card and in item reports.
4. Select the assortment property category at **Category** to which the assortment property belongs to. A property can only be linked to one property category. When the value is needed in two property categories, then the property must be created twice.
5. At **Security level**, select the security level type, or type the security level to determine the employees who will have access to the assortment property information.
6. Under the **Remarks** section, you can type additional information about the meaning and use of the assortment property.
7. If you have a picture that describes the assortment property, you can upload the picture under the **Pictures** section. At **Upload**, click **Browse** to select the picture file to be uploaded.
8. Click **Save** to save the new assortment property.

### Note:

- You can delete an assortment property after verifying that it is not used anywhere. If the property has been used, it cannot be deleted. To delete the property, go to Modules → Logistics → Setup → General → Assortment: Properties, select the property which you want to delete, and then click **Delete** on the **Items: Assortment Property** page.
- All fields with the "!" icon are mandatory.



At anytime, you can also define or edit the assortment property categories which you need to link to the assortment properties you want to create as described in step 4 of *To create assortment properties*. To do this, function right **13 - Maintain Item assortment names** is required. Users with the **Item management** role have this function right.

**To define assortment property categories:**

1. Go to Modules → Logistics → Setup → General → Assortment: Properties, and then select an assortment category which you want to define. For example, select **3 - assortment 3**.

The screenshot shows a web application window titled "Items: Assortment - Category". At the top right of the window are three icons: a window icon, a star, and a question mark. Below the title bar are two buttons: "Close" (with an 'X' icon) and "Save". The main content area is labeled "General" and contains two fields: "Code" with the value "3" and "Description" with the value "Product Group". The "Description" field is currently selected and highlighted in blue.

2. Under the **General** section, type a description for the new assortment category at **Description**. For example, type "Product Group".
3. Click **Save** to save the assortment category. You may want to create assortment properties like "Invoices", "Letterhead", and "Labels" and link them to the "Product Group" assortment category next.

### 4.7.3 Creating assortments

Assortments are used to categorize items. They can be defined as categories which are used to identify groups of items with similar properties. When you create an item, it is mandatory to link it to an assortment. To create assortments, go to Modules → Logistics → Setup → General → Assortments, and then click **New**.

To create and maintain assortments, function right **217 - Maintain Item assortment** is required. Users with the **Item management** role have this function right.

#### General section

General	
Assortment 2	
Code 2	
Description	Internal Products
Person	99981  Rob van den Berg

#### Assortment

Type a unique numeric code for the assortment of up to a maximum of 10 digits. This code cannot be edited once the assortment is saved. By default, the next running number is displayed. For example, if the previous assortment code is “105”, the next assortment code will be “106”.

#### Code

Type a unique code of up to a maximum of 30 characters for the assortment. This code cannot be edited once the assortment is saved.

#### Description

Type a description for the assortment.

#### Person

Type or select a person that will be in charge of the assortment. The person can modify the settings for the assortment regardless whether the person has the relevant function rights or role.

## Security section

Security	
Security level	Internal <input type="text" value="10"/>
Allow: New - Item	<input checked="" type="checkbox"/>
Price: Security	All <input type="text" value="0"/>

### Security level

Select the security level for the assortment. The security level will change once the security type is selected. For example, if **Internal** is selected, the security level will change to “10”. The security level determines whether the user is allowed to view the assortment. The security types available are:

- **All** — Select this option to allow all users to view the assortment.
- **Customers** — Select this option to allow only customers to view the assortment.
- **Partners** — Select this option to allow only partners of the company to view the assortment.
- **Customers (Specific)** — Select this option to allow only specific customers to view the assortment.
- **Partners (Specific)** — Select this option to allow only specific partners to view the assortment.
- **Internal** — Select this option to allow only internal users to view the assortment.

### Allow: New – Item


Select this check box to allow new items to use this assortment.

### Price: Security

Select the security level for the prices of the items in the assortment. The security level will change once the security type is selected. For example, if **Internal** is selected, the security level will change to “10”. This security level determines the user who is allowed to view the prices of the items in the assortment. The security types available are:

- **All** — Select this option to allow all users to view the prices of the items in the assortment.
- **Customers** — Select this option to allow only customers to view the prices of the items in the assortment.
- **Partners** — Select this option to allow only partners of the company to view the prices of the items in the assortment.
- **Internal** — Select this option to allow only internal users to view the prices of the items in the assortment.

## G/L Account section

G/L Account		
Revenue	8000	 Revenue
Deferred revenue		
Deferred cost		
Discount		
Cost of goods sold	7000	 Cost of goods sold
Purchase	1511	 VAT purchases
Price differences		

### Revenue/Deferred revenue/Deferred cost/Discount/Cost of goods sold/Purchase/Price differences

Type or select the general ledger accounts to be used in the respective transactions involving the items linked to this assortment.

## Contract section

Contract	
Used in: Contracts	<input type="checkbox"/>
Allow: New - Contract	<input checked="" type="checkbox"/>
Item - Selection	<input type="text"/>
Program - ID	<input type="text"/>
Parameter	<input type="text"/>
Document	
Security level	Internal <input type="text" value="10"/>

### Used in: Contracts

Select this check box to allow the assortment to be used when creating contracts.

### Allow: New – Contract

Select this check box to allow the assortment to be used only once for new contracts.

### Item – Selection

Type an item selection to create a main contract item for the assortment whereby the main contract item can be linked to the contracts. For example, to create a main contract item with item code “DB0101”, type Items.ItemCode = ‘DB0101’. However, define the item selection only if one main contract item is used for an assortment.

**Program – ID**

Type a program ID to generate vouchers. For example, “eVoucher.Document”. You will have to run a customized file, such as **Exact.Contract.Voucher.dll** to generate vouchers.

**Parameter**

Type a parameter to generate passwords for products.

**Document**

Select a document path for the assortment.

**Security level**

Select the security level for the assortment used in contracts. The security level will change once the security type is selected. For example, if **Internal** is selected, the security level will change to “10”. The security level determines whether the user is allowed to view the assortment in the contracts. The security types available are:

- **All** — Select this option to allow all users to view the assortment in the contract.
- **Customers** — Select this option to allow only customers to view the assortment in the contract.
- **Partners** — Select this option to allow only partners of the company to view the assortment in the contract.
- **Customers (Specific)** — Select this option to allow only specific customers to view the assortment in the contract.
- **Partners (Specific)** — Select this option to allow only specific partners to view the assortment in the contract.
- **Internal** — Select this option to allow only internal users to view the assortment in the contract.

**Properties section**


Properties	New
1 - Type	
Diverse verkopen	
Ingredienten	
Onderdelen	

Under the **Properties** section, you can link assortment properties to the assortment. However, you can only do this after you have clicked **Save** to save the assortment.

After you have clicked **Save** to save the assortment, you will see a **New** button on the header of the **Properties** section. Click **New** to link the assortment to the assortment properties you have created earlier at 4.7.2 *Creating assortment properties*.

**Note:**

All fields with the "!" icon are mandatory.

#### 4.7.4 Catalogs

Catalogs can be used to display the items of a certain assortment, or when implementing a web shop. Either way, it can be a very helpful in keeping items structured and to differentiate those items that are not available for the web shop. When working in an integrated scenario with Exact Synergy Enterprise and Exact Globe Next on the same database, the assortments are equivalent to each other.

Catalogs can be used to display available items. There is no limit to the number of catalogs that can be created. The catalogs that are created and the assortments that are linked to them determine the way the products are presented in the web shop. The catalog is what customers see when logging on to the web shop. Therefore, it is important that it is clear to customers what they need to do if they want to buy an item.

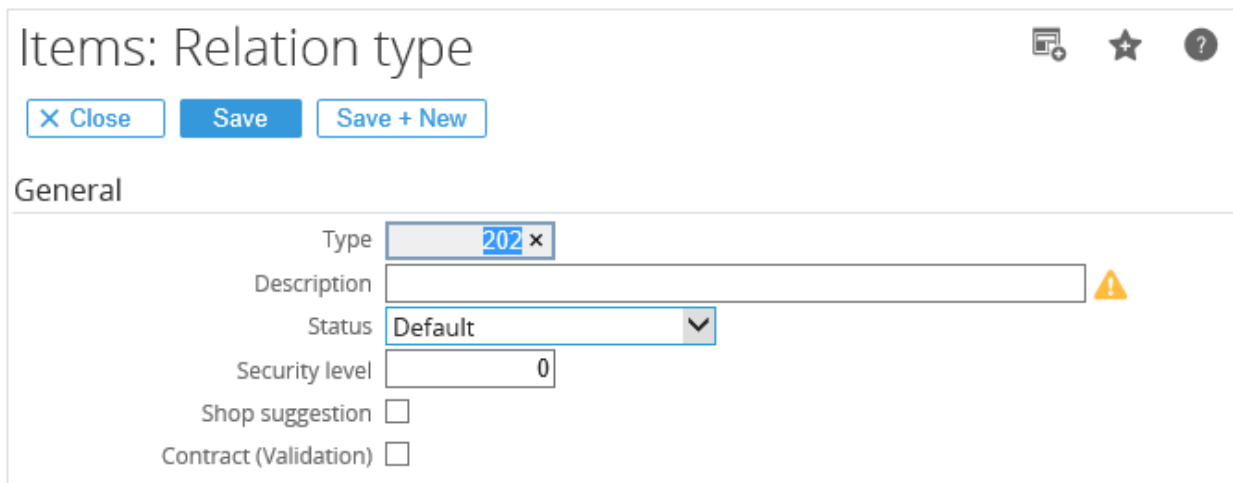
## 4.7.5 Creating item relation types

Relationships can be established between items. For example, a part item is an item that has a relation type with another item. For example, a finished product (parent item) needs to be shipped with the product manual (child item). Thus, the finished product is linked to the product manual by a relationship which is classified as mandatory. You can create and maintain item relation types in Exact Synergy Enterprise.

To create and maintain item relation types, function right **24 - Maintain Item relation types** is required. Users with the **Item management** role have this function right.

### To create item relation types:

1. Go to Modules → Logistics → Setup → General → Item: Relation types, and then click **New**. You will see the following page:



The screenshot shows the 'Items: Relation type' configuration page. At the top, there are three buttons: 'Close', 'Save', and 'Save + New'. Below these is the 'General' section with the following fields:

- Type:** A text input field containing '202 x'.
- Description:** A text input field with a yellow warning triangle icon to its right.
- Status:** A dropdown menu currently set to 'Default'.
- Security level:** A text input field containing '0'.
- Shop suggestion:** An unchecked checkbox.
- Contract (Validation):** An unchecked checkbox.

2. Under the **General** section at **Type**, type a unique numeric code for the relation type. This code cannot be edited once the type is saved. By default, the next running number is displayed. For example, if the previous relation type code is "50", the next assortment code will be "51".
3. Type a description for the relation type at **Description**.
4. At **Status**, select the status for the item relation type. The following is the brief description of the possible item relationships:
  - **Default** — This indicates a relationship and is not specific.
  - **Mandatory** — The child is mandatory when selecting the parent. The relationship is always top-down.
  - **Mandatory (One of set)** — Maximum one of the children is mandatory when selecting the parent.
  - **Mandatory (At least one)** — Minimum one of the children is mandatory when selecting the parent.
  - **Mandatory (One or none)** — Minimum one of the children or none is mandatory when selecting the parent.
  - **Optional** — The child is optional when selecting the parent.
  - **Optional (One of set)** — The child is optional, but at least one of this set should be selected.
  - **Replacement** — No functionality at this time.
  - **Trade-in** — No functionality at this time.
  - **Invalid** — This child cannot be selected if the parent has already been selected.

5. Click **Save** to save the item relation type.

**Note:**

All fields with the "!" icon are mandatory.














## 4.7.6 Creating items

You can create and maintain the items to be used in the system. To create items, go to Modules → Logistics → Entry → General → Items.

To create and maintain items, function right **34 - Maintain World Items, except to change the division** or function right **347 - Maintain Country items** is required. Users with the **Item management** role have these function rights.

### General section

General	
Code	<input type="text"/> 
Country	- World - 
Description	<input type="text"/> 
Search code	<input type="text"/>
Division	036  Exact Asia Development
Person	175745  Jo-Anna Goh Li Ping
Warehouse	LO  Central logistics
Type	Standard 
Active from	05-12-2016 
Active to	- - 
Status	
Security level	Internal  <input type="text" value="10"/>

#### Code

Type a unique alphanumeric code for the new item. You can type up to 30 characters. If you are modifying the item information, this information cannot be edited.

#### Country

Select a country for the item. By default, an item is created with **World** as the country. When an item is sold in more than one country, item code-country combinations are created to register the (price) regulations for each country.

#### Description

Type a description for the item.

#### Search code

Type a search code for the item.

**Division**

Select a division to be linked to the item. An item can be linked to a division, which can be used as a filter.

**Person**

Select a person to be linked to the item. The person will become the item's owner, and can therefore edit and modify the item properties. An item can only have one person as its owner.

**Warehouse**

Select the default warehouse for the item. This warehouse will be set by the system in logistics transactions for the item.

**Type**

Select a type for the item. The following types are available:

- **Standard** — Items that can be purchased, sold, and produced.
- **Phantom** — Items that cover a logical set of cost, discounts, payment conditions, or components in business transactions, such as extra charges, payment conditions, and shipping methods.
- **Bulk issue** — Items that are purchased, stored, manufactured, or sold in batches. Bulk issue items are usually items of relatively lower value and are small in size.
- **Labor hour** — Labor capacity used to produce a manufactured item.
- **Machine hour** — Machine capacity used to produce a manufactured item.
- **Contract** — Items related to service management.
- **Reason codes** — Items related to reason codes. Reason codes are used in the swap function, reject contract function, and termination for rental contracts to represent the reason for exchanging serialized rental equipment, rejecting a contract, or creating a termination respectively.

**Note:**

The item type determines how the item can be used in Exact Synergy Enterprise and Exact Globe Next.

**Active from**

Type or select a date starting from which the item is active. By default, the current login date is selected.

**Active to**

Type or select a date after which the item is inactive. After the item is inactive, you will not be able to use this item for logistics transactions (sales orders, purchase orders, and internal use requests).

**Note:**

It is not necessary to fill in this date unless the inactive, blocked, or discontinued date of the item is known.

**Status**

Select a status for the item you want to create. The following statuses are available:

- **Blocked** — Items that are blocked for use in all standard transactions, such as sales, purchase, assembly or manufacturing, receiving, and delivery. However, blocked items can still be used in bills of material, budget planning, and stock counts.
- **Discontinued** — Items that are blocked for use in purchase transactions but can still be used in bills of material, sales, budget planning, and stock counts.

**Security level**

Type the security level to restrict the people who are allowed to use and view the item.

**Prices section**

Prices			
Unit	Bag		Bag
Type	Discounts		▼
Sales price	EUR		Euro 70.0000
Costs	EUR		Euro 35.0000

**Unit**

Type or select a unit of measure for one unit of the item.

## Type

Select a price model to determine the sales price of an item. The following price models are available:

- **Discounts** — This price model is used to define price models that are dependent on the quantity of items sold. Sales prices are calculated based on the price per item. When viewing the item information, the prices shown are always per item. For example, the price for one unit of item A is EUR 200 per unit, EUR 180 per unit for two units, and EUR 150 per unit for five units. The total price calculated for three units sold is EUR 540 ( $3 \times 180$ ) and the total price for eight units sold is EUR 1200 ( $8 \times 150$ ).
- **Variants** — This price model is used to define price models that are not dependent on the quantity of the items sold. Sales prices are calculated based on the total price for a certain quantity of items. The price per piece is the total price divided by the quantity. For example, the total price for one unit of item B is EUR 200, two units is EUR 380, and five units is EUR 850. The total price calculated for three units sold is EUR 570 ( $(380/2) \times 3$ ) and the total price for eight units sold is EUR 1360 ( $(850/5) \times 8$ ).

## Sales price

Type or select a currency, and then type an amount to define the sales price of one unit of sale item.

## Costs

Type or select a currency, and then type an amount to define the cost price of one unit of sale item.

## Attributes section

Attributes		
<input checked="" type="checkbox"/> Sales	<input type="checkbox"/> Part	<input type="checkbox"/> Explode
<input type="checkbox"/> Buy	<input type="checkbox"/> Divisible	<input checked="" type="checkbox"/> Batch
<input checked="" type="checkbox"/> Stock controlled	<input type="checkbox"/> Policy	<input type="checkbox"/> Text
<input type="checkbox"/> From stock	<input type="checkbox"/> Make	<input type="checkbox"/> Print on invoice
<input checked="" type="checkbox"/> Serial numbers	<input type="checkbox"/> No discount	<input type="checkbox"/> Service
<input type="checkbox"/> Billable	<input type="checkbox"/> Productive	

Under the **Attributes** section, you can define the attributes of the item that determine the transactions allowed for the item.

### Sales/Buy/Stock controlled/From stock/Serial numbers/Billable/Part/Divisible/Policy/Make/No discount/Productive/Explode/Batch/Text/Print on invoice/Service

Select the check boxes to define the attributes of an item. You can select more than one check box. The attributes selected allow you to use the item in specific circumstances. For example, if an item needs to be sold, then the **Sales** attribute must be selected. If an item uses serial numbers, the **Serial numbers** check box must be selected. At least one attribute must be set for each item. For more information on item attributes, see *4.7.7 More on item attributes*.





## G/L Accounts section

G/L Accounts	
Asset	<input type="text"/> 
Costs	<input type="text"/> 
Purchase	<input type="text"/> 
Revenue	<input type="text"/> 

## Asset/Costs/Purchase/Revenue

Type or select the general ledger accounts that will be used to register the relevant transactions for the item. By default, the general ledger accounts are filled in with the general ledger accounts of the assortment specified for the item under the **Categories** section. You can still change the accounts manually.

## Other section

Other	
Replacement	<input type="text"/> 
Request - Shopping	<input type="text"/> 
Request - Purchase	<input type="text"/> 
Statistical code	<input type="text"/> 
Weight: Net	<input type="text" value="0.0000"/>

## Replacement

Type or select an item code to specify the replacement for this item if it is not available.

## Request – Shopping

Type or select a request type to specify the request definition which is used to generate the sales order for the item.

## Request – Purchase

Type or select a request type to specify the request definition which is used to generate the purchase order for the item.

### Statistical code

Type or select a statistical code for the item. Statistical codes are used by the Intrastat system to enable identification of different types of movement of goods, for example, regular import and export, transit traffic, and temporary relocation of stocks.

**Note:**

This function is used in Exact Globe Next (defined at System → Logistics → Intrastat). Intrastat is the system for collecting statistics on the movement of goods among member states of the European Union (EU).

### Net weight

Type or select a value to specify the weight (in kilograms) of one unit of the item.

### Categories section

Categories	
Assortment	2 <a href="#">Internal Products</a>
Type	<input type="text"/>
Product Group	<input type="text"/>

### Assortment

Type or select an assortment to be linked to the item. This is mandatory.

**Note:**

- If the assortment is linked to assortment properties, you will see the assortment categories displayed after you have selected the assortment. At each assortment category, there is a list of assortment properties that are available for selection. Select the relevant assortment properties for the item at the respective assortment category.
- All fields with the "!" icon are mandatory.

**Tip:**

After you have clicked **Save** to save the item, you can upload a picture of the item under the **Picture** section in the item card.

### 4.7.7 More on item attributes

The following table summarizes the item attributes used in Exact Synergy Enterprise:

Attributes	Explanation
Sales	This is used for items to be sold either internally or externally. This must be set to display the item(s) in the catalog. If a sales item exists but should not be shown in the catalog, modify the availability and do not reset the <b>Sales</b> attribute.
Buy	These are items that are bought, either to resell or to use internally. After creating the item, the purchase attributes are linked to a report listing all supplier accounts that are linked to the item.
Stock	This determines if the item is a stock item. Click <b>Stock</b> to get a stock position report.
From stock	This has no functionality in Exact Synergy Enterprise. This is used in Exact Globe Next as an indicator that the shelf stock should always be available for this item.
Serial numbers	This is used to track the item with a serial number, or used if an item is a planning item. For example, assets, meeting rooms, hardware, and cars.
Part	This is used for product parts. Select this if the item is actually a part that is used to make another item. Click <b>Part</b> to start configuring the item.
Divisible	If selected, fractions on the item are allowed.
Policy	Policy attributes allow the item to contain policy information.
Make	This indicates the presence of a product structure for this item which can be used during the assembly, manufacturing, or delivery process. Only items with structures can be produced.
No discount	This attribute allows or prevents sales pricelists to be entered for this item, and allows or prevents a discount on the item when entering a sales transaction.
Explode	If the item has the <b>Make</b> attribute selected, the <b>Explode</b> attribute allows you to print a detailed delivery note to send with the shipment. This attribute also activates the ability to add conditions to the delivery of the item. The individual parts and delivery conditions for the item can be registered in the bill of materials. When the <b>Explode</b> attribute is selected, the <b>Make</b> attribute is mandatory.
Batch	This identifies the item as a batch item. Batch numbers are unique numbers.
Text	Use the <b>Text</b> attribute for items that require additional text next to the item description or an item description longer than the standard item description field. The text will be displayed on quotations, orders, and invoices, and can be modified during the creation of a quotation, an order, or, an invoice on a case-by-case basis. The <b>Sales</b> attribute is mandatory if the <b>Text</b> attribute is selected.
Service	Select this attribute if the item is a service item.

## 4.8 PROCESSES: BACKGROUND

Various background jobs can be executed to automate certain tasks in Exact Synergy Enterprise. You can view all the available background processes, the recent start dates of the background processes and whether the background processes are mandatory at Modules → System → Setup → Database → Set up company under the **Processes: Background** section.

Processes: Background			
Process		Last: Start date	Mandatory
Validation: Entries - Financial	?	None	No
Import: Entries - Excel	?	None	No
Calculate: Count - Documents	?	None	No
Mail merge	?	None	No
Create: Windows NT accounts / MS Exchange Mail boxes	?	None	No
Compress: Attachments - Items	?	None	No
Calculate: Status - Customer	?	None	No
Calculate: Rating - Customer	?	None	No
Contract - Prolongation	?	None	No
Full-text Index - Documents	?	None	Yes

For more information on how to configure and run the background jobs, see *Chapter 5 Background Jobs Configuration*.



# 5. BACKGROUND JOBS CONFIGURATION

With every installation of Exact Synergy Enterprise, there are a number of background jobs available that perform specific tasks on the database. This section describes the various background jobs that are included with Exact Synergy Enterprise.

## **Conventions:**

Throughout this chapter, the command syntax of each background job is explained using the following conventions:

- Parameters enclosed within square brackets ([ and ]) are optional.
- The chevrons (< and >) signifies that you need to replace the text (including the chevrons) with appropriate values.
- The command-line parameters are case sensitive.

## 5.1 CONFIGURING BACKGROUND JOBS

The background jobs are executed by command and parameters. Therefore, the jobs can be scheduled using the Microsoft SQL Server Agent or Microsoft Windows Task Scheduler.

### 5.1.1 Requirements to run background jobs

The following must be observed in order to successfully run the background jobs:

- A Microsoft Windows user that is part of the Administrator group should be present in Exact Synergy Enterprise. This user will be responsible for running the background jobs because some background jobs will interact with the domain controller, the Microsoft Exchange server and of course with Exact Synergy Enterprise. The user needs enough rights on the Microsoft Windows level and the **Administrator** role in Exact Synergy Enterprise.
- The Microsoft Windows user name should be equal to the user ID in Exact Synergy Enterprise.
- The Microsoft SQL Server Agent service or the Microsoft Windows task scheduler can be used to run the background jobs. The service or task should be started by the user as described above.
- The user starting up the Microsoft SQL Server Agent service should have a Microsoft Outlook Express profile. Although Microsoft Outlook Express is not used for sending out e-mails, it is important to create this profile. The information entered is not important.
- It is important to be logged on as the user that starts the background jobs when creating the profile.

### 5.1.2 Main process to run background jobs

Exact Synergy Enterprise uses only one executable file, **Exact.Process.exe**, to run all the background jobs. The different background jobs are the Dynamic-link Library (DLL) files that are called by the **Exact.Process.exe** via parameters.

The following summarizes the general command syntax with the three main parameters:

Exact.Process.exe /ASSEMBLY:<DLL> /CLASS:<function> /DBCONFIG:<database>	
/ASSEMBLY:<DLL>	The DLL storing the respective functions.
/CLASS:<function>	A specific function within the DLL
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case sensitive.

The following is an example of the command to run a background indexing of **Exact Synergy Enterprise** documents:

```
Exact.Process.exe /DBCONFIG:Synergy /ASSEMBLY:Exact.WordIndex /
CLASS:IndexDocuments
```

Apart from these generic parameters, each job may have specific parameters controlling the behavior.

### 5.1.3 Background jobs available

The following table summarizes the available background jobs:

Assembly	Functions
<b>Exact.Jobs.SysMaint</b>	<ul style="list-style-type: none"> <li>• Updates status of employees from <b>Hired</b> to <b>Active</b> and from <b>Active</b> to <b>Inactive</b> based on start and exit dates.</li> <li>• Creates Windows user account for new employees.</li> <li>• Informs managers or account managers of resellers on the user account and password through <b>Task</b>.</li> <li>• Creates documents for the manager of new employees, and informs them of the new ID.</li> <li>• Deletes Windows user accounts of inactive employee.</li> <li>• Updates the absence field in the <b>humres</b> table to indicate whether the employee is in or out of the office for the day.</li> </ul>
<b>Exact.WordIndex</b>	<ul style="list-style-type: none"> <li>• Updates the index tables in order to make use of the <b>Enterprise search</b> mechanism.</li> </ul>
<b>Exact.Jobs.SysHrMail</b>	<ul style="list-style-type: none"> <li>• Sends out e-mails for mail merge purposes.</li> <li>• Merges and creates requests.</li> <li>• Customers/Logistics batch update.</li> <li>• Cleans up the <b>Not validated</b> accounts.</li> <li>• Exports the <b>HRM, Customers, and Financial</b> reports to Microsoft Excel.</li> </ul>
<b>Exact.Jobs.CRM</b>	<ul style="list-style-type: none"> <li>• Validates and checks account statuses (non-validated, prospects and customers) based on sales forecasts and contracts.</li> <li>• Evaluates account ratings based on their contract values (for customers and resellers only).</li> <li>• Updates all databases defined in Exact Synergy Enterprise <b>Customers</b> from the central database.</li> <li>• Updates all licenses.</li> </ul>
<b>Exact.Jobs.Documents</b>	<ul style="list-style-type: none"> <li>• Recalculates all document counts and removes the <b>New</b> indication when using the summary views of <b>Documents</b>.</li> <li>• Calculates all existing document references for pictures.</li> <li>• Removes all the expired documents based on document expiry dates.</li> <li>• Removes all pictures in the database that are not used by any document.</li> <li>• Updates the documents versions. When a version is added for a specific document, this parameter will ensure that the new version is set to <b>Active</b>.</li> </ul>
<b>Exact.Jobs.SysLogTool</b>	<ul style="list-style-type: none"> <li>• Reduces the size of the database by deleting the old log entries at Modules → System → Reports → Log → Processes.</li> </ul>
<b>Exact.Jobs.ConProcess</b>	<ul style="list-style-type: none"> <li>• Processes contracts.</li> </ul>
<b>Exact.Jobs.FinExchange</b>	<ul style="list-style-type: none"> <li>• Imports financial entries automatically.</li> </ul>
<b>Exact.Jobs.FinCheck</b>	<ul style="list-style-type: none"> <li>• Compares financial figures with Exact Globe Next administration.</li> </ul>
<b>Exact.Jobs.FinPending</b>	<ul style="list-style-type: none"> <li>• Validates imported financial transactions.</li> </ul>

---

<b>Exact.Jobs.FinExcel</b>	<ul style="list-style-type: none"><li>• Imports transactions via Microsoft Excel.</li></ul>
<b>Exact.Jobs.SysExchange</b>	<ul style="list-style-type: none"><li>• Synchronizes appointments between Microsoft Outlook and Exact Synergy Enterprise <b>Calendar</b>.</li></ul>
<b>Exact.Jobs.Workspaces</b>	<ul style="list-style-type: none"><li>• Generate thumbnails for workspaces.</li></ul>

---

### 5.1.4 IFilters for indexing document attachments

An IFilter is plug-in application that allows the indexing of contents in a file of a specific format. In order to index attachments in Exact Synergy Enterprise documents, you need the appropriate IFilter. For every extension, an IFilter should be installed on the server on which the full text background job is started. For more information about IFilters, see <http://www.ifilter.org/> and <http://msdn2.microsoft.com/en-us/library/ms691105.aspx>.

#### Installation of Microsoft Office IFilters

Microsoft Office IFilters is installed by default when you install one of the Microsoft Office applications like Microsoft Word, Microsoft Excel, or Microsoft PowerPoint. The **Exact.Jobs.SysHrMail** background job requires Microsoft Excel to create exports in the Microsoft Excel format. If this job is configured with Microsoft Excel, the IFilters will be available for the full text background process.

#### Installation of PDF IFilters

IFilters for the PDF format can be downloaded from the Adobe web site. Currently, Adobe has only IFilters available for 32-bit systems. If you require PDF IFilter for a 64-bit environment, you can get the PDF IFilter from Foxit at <http://www.foxitsoftware.com/pdf/ifilter/>.

For the PDF IFilter, a path setting to the installation directory of Adobe or Foxit is needed.

#### To configure path settings:

1. Go to Start → Control Panel → System and Security, and then click **System**.
2. In the left pane, select Advanced system settings.
3. Under the Advanced tab, click **Environment Variables**.
4. Under **System variables**, select **Path in the Variable column**, and then click **Edit**.
5. Add the path at the end of the value at **Variable value** and click **OK**.
6. Click **OK** on the **Environment Variables** page.
7. Click **OK** on the **System Properties** page.

**Note:**

The steps above are based on Windows 7.

### 5.1.5 Troubleshooting background jobs

After setting up the background jobs, they should be tested. The first check is to start the jobs one by one and watch the job history of the Microsoft SQL Server Agent. The second most important check is to verify in Exact Synergy Enterprise whether errors were logged during execution of the jobs. To do this, go to Modules → System → Reports → Log → Processes where you can check whether the jobs have been executed properly.

## 5.2 RUNNING BACKGROUND JOBS

Background job assemblies are the Dynamic-link Library (DLL) files that are called assemblies. In these assemblies are the specific functions that perform the background jobs. In order to execute these functions, you will need to call them using **Exact.Process.exe**, specifying the assembly and the function in the assembly. Some assemblies also support extra parameters. The functionalities of the assemblies, the class functions, and the parameters are described in detail in the following topics.



## 5.2.1 Exact.Jobs.SysMaint

In Exact Synergy Enterprise, there are a number of **HRM** processes which can be automated using a background job. This background job performs the following functions:

1. Edits details of people, financial components, and item details based on the start date and end date of employment:
  - Sets all statuses for people from **Hired** to **Active** on the day they begin working.
  - Sets all statuses for the people from **Active** to **Exit** on the day they stop working.
  - Sets the end date of financial components for people leaving the company. If the end date of the employment contract is defined, the end date of the financial component will be the end date of the contract. Otherwise, it will be the end date of the employment.
  - Reassigns the subordinates of people leaving the company to his or her manager. A task will be created for the manager informing him or her of the transfer of subordinates.
  - Reassigns the accounts, projects, and items of people leaving the company to his or her manager. A task will be created for the manager informing him or her of the transfer of responsibilities.
  - Removes all people leaving the company from projects in the **Active** or **Proposed** status, in which they are involved in.
  - Removes all people leaving the company as assistants to other people with the **Active** status.
  - Sets the status for people leaving the company to **Blocked**, denying him or her access to Exact Synergy Enterprise.
  - Removes all roles for people leaving the company.
2. Creates or deletes Windows user accounts:
  - Creates Windows domain user accounts for people with the **Active** status of types **Employee**, **Contractor**, **Student**, and **Temporary**, who do not have Windows domain user accounts.
  - For new users, this background job fills in the Windows user profile with user details defined in Exact Synergy Enterprise. For existing users, this background job updates the Windows user profile with any updated information. Two important points must be taken into account concerning this functionality:
    - Windows user profiles are only available for environments using Active Directory Services and when the **create Exchange Mailbox** check box is selected (Modules → HRM → Setup → General → Settings).
    - The user profiles are only defined for people, not for the resellers.
  - Deletes Windows domain user accounts for all people leaving the company. Sets Microsoft Exchange mailboxes to inactive if it is set up to do so.
  - Creates Windows domain user accounts for reseller contacts without a Windows domain account.
  - Deletes Windows domain user accounts for all discontinued reseller contacts.
  - Creates Windows domain user accounts for customers that have been granted access to the customer portal.
  - Regenerates passwords for customers, in situations where they have forgotten the original password.
  - Deletes Windows domain user accounts for customers that have had their access to the customer portal revoked.
  - Creates a task informing the appropriate person of new and deleted accounts. For people, this person is the manager of the new person or the person leaving the company. For resellers, the person informed is the account manager if the new user is the main contact of the reseller. If the new user is not the main contact of the reseller, then the task is created for the main contact of the reseller.

3. Creates vacancies:
  - Creates a vacancy request automatically when a vacancy is created.
  - Vacancy request is approved.
  - The **Exact.Jobs.SysMaint.dll** background job takes place and the vacancy status is set to **Approved**.
4. Allows new users remote access via VPN (Virtual Private Network) if the option is enabled in the **HRM** settings.
5. Updates the **absent** flag in the **humres** table. This status indicates whether the user is out of office.
6. Closes the HR periods and generates entitlements when this function is set in Exact Synergy Enterprise.
7. Creates FTP directories for customers and resellers if the **use Active Directory** check box is selected at **Domain: New – Customer (Pre-Win2000)** and **Domain: New – Partner (Pre-Win2000)** under the **Server** section on the **HRM: Settings** page.
8. Adds or removes the members of a certain Exact Synergy Enterprise role to or from a certain Windows domain group. This option is applicable only where a group is assigned with any Exact Synergy Enterprise access role. There are three main tasks that are executed by **Exact.Jobs.SysMaint** based on the following sequence:
  - /FTP — This command is used to create the FTP folder.
  - /GMDomain — This command is used to create the Synergy domain group.
  - /NT — This command is used to create a normal task.

**Note:**

Each of the main tasks must be scheduled separately.

9. When you run **Exact.Jobs.SysMaint**, the system will create NT user accounts for the people. The user account properties will not have the **Email Addresses**, **Exchange General**, **Exchange Features**, and **Exchange Advanced** tabs.
10. The following properties will be created for resellers or customers with NT accounts:
  - **SetUserPassword** — This property is used to generate a new password.
  - **NewUserDE.Properties("displayName").Value = sAccountName** — This property refers to the display name.
  - **NewUserDE.Properties("sAMAccountName").Value = sLoginName** — This property refers to the user login name.
  - **NewUserDE.Properties("userPrincipalName").Value = FullLogonName(oNewUserDE.Path, sLoginName)** — This property refers to the principal name of the user (an alternative name for the user to log in).

```

If Len(sDescription) > 0 Then
    oNewUserDE.Properties("description").Value = sDescription - ["Automatically made
on ", Now, " for reseller"]
End If
If bUseRAS Then
    oNewUserDE.Properties("msNPAllowDialin").Value = True - ["permission to dial in
to the RAS server "]
End If
If Len(sLoginScript) > 0 Then
    oNewUserDE.Properties("scriptPath").Value = sLoginScript - [Specifying the path
of the user's logon script]
End If

```

**Note:**

The NT account creation is only applicable for first time creation. Subsequently, there will not be any updates to the fields (no synchronization).

## Technical information

The following tables are involved when running **Exact.Jobs.SysMaint**:

- **humres**
- **Absences**
- **RequestTasks**
- **AbsenceTypes**
- **BacoProcessLog**
- **cicmpy**
- **cicntp**

When running **Exact.Jobs.SysMaint**, the background job will first check the statuses, start dates, contract end dates, and inactive dates of all employees. When values are defined in these fields, appropriate actions will be taken. For example, when an employee starts working today, the job will change the status of the employee from **Hired** to **Active**. A Windows account will also be created for this employee. Where this account is created depends on the settings which can be set up via Modules → HRM → Setup → General → Settings. The password will be generated in a task for the manager of the employee.

After checking the details of the employees, the background job will then check whether there are accounts that have been granted portal access and whether there are contact persons of resellers that have been granted portal access. If there are such accounts, the background job will generate a username and a password for these new accounts. The Windows accounts will also be created in the domain specified via Modules → HRM → Setup → General → Settings.

In the case of giving portal access for customers, a task is created for the account manager with login details. An e-mail will be sent to the e-mail address of that account containing the login details. For resellers, the same applies but the first portal access is given to the main contact person. In the initial stage, a task is created for the account manager and an e-mail is sent to the main contact. After this, the main contact person is responsible for giving portal access to his colleagues.

After giving portal access to the accounts, the background job checks whether there are employees absent. This is done based on the **Out of office** setting in the request definition. Based on this, the background job searches for employees who are absent with this setting turned on. Then it checks the date in the requests and compares them with the current date. When these two dates match, the status for the employees is set to **Out of office**.

## Command syntax

The following is the command syntax for **Exact.Jobs.SysMaint**:

```
Exact.Process.exe/ASSEMBLY:Exact.Jobs.SysMaint/CLASS:SysMaint/DBCONFIG:
<database>[/NT][/NOPDC][/FTPR:<directory>][/FTPC:<directory>][/FTPDIV:<#1;...;#n>]
[/FTPEXP:<days>]
```

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/NT	Executes normal tasks (creates or updates NT accounts, reassigns subordinates).
/NOPDC	Creates or deletes Windows user accounts when there is no <b>Primary Domain Controller</b> in the <b>HRM</b> settings.
/NOEMPACCOUNT	Updates the Windows user accounts status for <b>Hired</b> or <b>Exit</b> employees but not <b>Active</b> employees.
/FTPR:<directory>	Reseller contact person root directory on the FTP server.
/FTPC:<directory>	Customer root directory on the FTP server.
/FTPDIV:<#1;#2;...;#n>	List of division codes to which the customers or resellers belong, each separated by a semi colon.
/FTPEXP:<days>	Number of days after which the content of the FTP directory expires.
/IGNOREBLOCKED	Lists the active users (hired people and active employees) with the <b>Blocked</b> status.
/L	Updates the <b>LogonScript</b> property of the NT account for a new recruit with the name specified after the <b>/L</b> parameter (for example, /L:ADCLogonScript.bat).
/RAS	Grants all new employees the remote access permission (Dial-in or VPN) only if <b>Active Directory</b> is used.
/IM	Grants all new employees the right to use the primary Instant Messaging Server on the <b>Active Directory</b> domain.
/GMDomain	Refers to the domain server name.
/GMRole	Adds or removes the members of a certain Exact Synergy Enterprise role to or from a certain NT domain group. The value(s) of this parameter have to be equal to the ID(s) of the role(s).
/E	Refers to the FQDN (Fully Qualified Domain Name) of the Microsoft Exchange Server 2010.
/ESEURL	Refers to the URL for Exact Synergy Enterprise.
/MAILBOXDATABASE	Defines the mailbox database name, which can be included in the command line to force the background job to create mailboxes automatically. Use this only if there is a failure in creating mailboxes (with errors) when running the background job.

## System settings

The relevant settings in Exact Synergy Enterprise can be accessed at Modules → HRM → Setup → General → Settings.

HRM: Settings

Close
Edit

---

**Server**

Domain: New - People (Pre-Win2000) test  use Active Directory  create Exchange Mailbox

Organization: Unit (People) Subdirectory

People: Outlook Web Access DocView.aspx?DocumentID={d10ebc69-1508-4c83-95e7-84efdc686be3}&noheader=1&nosubject=1

Exchange: Domain @ (Separator = ;)

Exchange server version: Exchange server 2013 SP1

Domain: New - Partner (Pre-Win2000)  use Active Directory

Change password at next logon (People)

Domain: New - Customer (Pre-Win2000)  use Active Directory

Request: Portal access Task (Copy)

E-mail  Microsoft Outlook  SMTP

Server smtp.exact.nl

Port 25

Program: ID (Background - Process) (Separator = ;)

OCS presence

---

**Privacy**

Levels of indirect managers permitted to view person specific documents and requests 20

---

**Expense claims**

Request type [9057 — Return to work](#)

---

**Absence**

Hours per day: Default 10.00

Request type: Work time reduction [8 — Credit days](#)

Request type: Vacation [1 — Vacation/PTO \(Copy\)](#)

Request type: Sick [2 — Sick/DR](#)

The settings in the **Server** and **Absence** sections determine how and where new employee entries are created and also where accounts for customers and resellers are created if given portal access. When portal access is given, you can also determine which type of request is created for the account manager and you can make the relevant adjustments in the e-mail that is sent to the account.

## Reports and troubleshooting

To verify in Exact Synergy Enterprise whether errors were logged during execution of the jobs, go to Modules → System → Reports → Log → Processes where you can check whether the jobs have been executed properly.

## 5.2.2 Exact.WordIndex

**Enterprise search** is an advanced functionality that allows you to rate content that is stored in requests, documents, and document attachments. The following are some examples of how content is rated based on the criteria defined:

- The number of times the search term exists in the requests, documents, or attachments.
- The number of times the documents are referenced to.
- The number of references that exist to other information carriers.

The extensions of attachments that can be searched on content-wise are “.doc”, “.docx”, “.ppt”, “.pptx”, and “.pdf”. Apart from relevance ranking, the **Enterprise search** functionality also incorporates:

- **Synonym search** — This is based on a self-defined list of synonym words that are linked to each other. For example, if “proposal” = “quotation”, searching for the term “proposal” will in this case also provide you information where “quotation” is used.
- **Do you mean** — Whenever the search term is wrongly spelt, the system will look for better alternatives in the database and propose this as the term to use. For example, searching for “qoutation” will result in the system proposing “quotation” instead.
- **Expertise search** — When using the people search field, you can search for a person and the documents that this particular person has written. For example, searching for “SQL 2005” will give you a list of the relevant people that have written on this topic.

There can be many requests in an implementation, but what is important is that the **Exact.WordIndex** process is performed in the most efficient manner.

This document will describe the steps that should be taken to get populated full text tables for the search engine. Two background jobs should be created, one to index the documents, requests, and attachments and another to optimize and enable the **Do you mean** functionality.

### Technical information

The following tables are involved in the **Enterprise search** functionality:

- **Words**
- **WordReferences**
- **WordSynonyms**

In the first two tables, the words are linked to the GUIDs of the documents, document attachments, and requests in which they are found, including the data used for calculating the relevance. When a user searches for certain words in Exact Synergy Enterprise, the words are checked in the tables mentioned and the results are shown to the user. The **WordSynonyms** table stores the user-defined synonyms, which are defined at Modules → System → Setup → Full-text index → Synonyms.

In addition, an entry is made in the **BacoSettings** table after each run, which states when the job was last executed. When the job is executed again, it will not index documents that were created or last modified before that time. It will only index documents that are created or last modified after that time.

## Command syntax

The following is the command syntax for **Exact.WordIndex**:

```
Exact.Process.exe/ASSEMBLY:Exact.WordIndex/CLASS:IndexDocuments/DBCONFIG:<database>
e> [/Filter:<value>] [/ Selection:<n>] [/TimeStampSetting:<name>] [/MaxEntities:<n>]
[/MaxMinutes:<n>] [/Abort:1] [/Descending] [/ CacheWords] [/Bulk]
```

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/Filter:<value>	The filter can be used to index a specific set of entities. For example, <value> can be: "bd.ModifiedDate>2004-01-01" "Absences.HID=45662".
/Selection:<n>	The entities are always processed in the order of timestamps where <n> is: <ul style="list-style-type: none"> <li>• <b>0</b> - Process will continue from where it has last finished.</li> <li>• <b>1</b> - All entities will be processed.</li> </ul> <p>The timestamp of the last processed entity is by default, stored in the <b>FullTextDocTimestamp</b> setting. A different setting name can be specified with <b>/TimeStampSetting</b>.</p>
/TimeStampSetting:<name>	Use this option to specify a setting name that will be used to save the timestamp of the last processed entity. This option is very useful if you want to run more instances of the process. Every instance can process a different range (use /Filter) and save the state as a different setting.
/MaxEntities:<n>	Specifies to process <n> number of entities.
/MaxMinutes:<n>	Specifies the process to execute <n> number of minutes and terminate after the time has elapsed. The program might run a bit longer than specified, in order to complete all insert and update queues.
/Abort:1	Aborts all the running instance of this job for this database.
/Descending	Specifies that the entities must be processed in descending order.
/CacheWords	Cache all existing words. Caching will speed up the process only if a lot of entities must be processed. Do not use this if there are only a few entities to process. New words are not dynamically added to the cache. Therefore, when you are starting to build the index, it is better to stop the process after some entities (for example, 1,000) are done, and then restart the process to cache the words that are just inserted.
/Bulk	Enables "bulk inserts". This method might speed up the process because it decreases the number of roundtrips to the database server.

## System settings

There are no specific system settings required.

## Reports and troubleshooting

To verify in Exact Synergy Enterprise whether errors were logged during execution of the jobs, go to Modules → System → Reports → Log → Processes where you can check whether the jobs have been executed properly.



### 5.2.3 Exact.Jobs.SysHrMail

The **Exact.Jobs.SysHrMail** background job performs several tasks:

- **Marketing** — This allows you to update some fields of all the accounts found based on the search criteria. This functionality is available via Modules → CRM → Reports → Accounts → Search and can only be used to update fields of accounts and contact persons.
- **Export** — This allows you to export the search results to a Microsoft Excel sheet. After indicating the information that you want exported to the Microsoft Excel sheet, you can create the task for **Exact.Jobs.SysHrMail**. After running the background job, a task will be created with the Microsoft Excel sheet attached.
- **Mail Merge** — This sends an e-mail to all accounts or people listed in the search results. You can prepare a mail merge layout with **Baco** tags and a predefined text. After running the background job, that document will be sent to all accounts or people listed in the search results.
- **Request** — With this function, you can create a request for every person listed or with every account listed as the linked account in the request. This is an easy way to create multiple requests for people and accounts.
- **Cleaning up of accounts** — This removes non-validated accounts that fall within the criteria defined.
- **Deduplication** — The background job either generates a preview of duplicate accounts to be merged or physically merge the duplicate accounts and its contacts together. A Microsoft Excel report is generated for each deduplication task - preview or actual merge. The duplicate accounts will be merged based on the merge settings which are set by the user.

### Technical information

The following tables are involved when running **Exact.Jobs.SysHrMail**:

- **MailMergePending**
- **BacoAppLog**

When setting up the mail merge, all information will be entered in **MailMergePending**. The status of the mail merge is also stored in this table with the value “0”, which indicates that the mail merge still has to be executed and the value “1”, which indicates that the mail merge task has been processed. The data that will be sent is also stored in the table via a SQL query.

When the job is running, it will check **MailMergePending** for new tasks and performs the tasks listed as “to do”. After processing the tasks, the status is changed to “1” and the log entries are entered in **BacoProcessLog**. In **MailMergePending**, you can check which type of report has been processed or is going to be processed based on the “report type”. There are seven possible values for this field:

- **R** — Mail merge using **HRM** (people) data.
- **C** — Mail merge using **Customers** (accounts) data.
- **CNT** — Mail merge using the data of contact persons. The e-mails are sent to all contact persons of the specified account.
- **XR** — Microsoft Excel export for **HRM** (people) data or other types of Exact Synergy Enterprise data using a DLL to create the query or validation.
- **XC** — Microsoft Excel export for **Customers** data or any other types of Exact Synergy Enterprise data that inserts a SQL query into **MailMergePending** (without separate DLL).
- **XF** — Microsoft Excel export for financial data.
- **OPT** — Microsoft Excel export for people options data.

## Command syntax

The following is the command syntax for **Exact.Jobs.SysHrMail**:

**Exact.Process.exe/ASSEMBLY:Exact.Jobs.SysHrMail/CLASS:SysHrMail /DBCONFIG:<database> [/X:<option>]**

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/X:<option>	Performs only the job where <option> is: <ul style="list-style-type: none"> <li>• <b>XCT</b> — Only processes Microsoft Excel contract exports.</li> <li>• <b>XP</b> — Only processes Microsoft Excel procurement exports.</li> <li>• <b>XF</b> — Only processes Microsoft Excel financials exports.</li> <li>• <b>OPT</b> — Only processes Microsoft Excel exports for the <b>HRM</b> option transactions.</li> <li>• <b>BC</b> — Only processes Microsoft Excel exports for the <b>Customers</b> batch updates.</li> <li>• <b>BL</b> — Only processes Microsoft Excel exports for the <b>Logistics</b> batch item updates.</li> <li>• <b>CL</b> — Only clears up non-validated accounts.</li> <li>• <b>BA</b> — Performs the deduplication process.</li> </ul> <p>If /X is not defined, the job will execute all process steps except the <b>CL</b> option.</p>

## System settings

In order to run this background job properly, two important points need to be taken into consideration on the server where this job is executed:

- Microsoft Excel must be installed. The administrator who runs the Microsoft SQL Server Agent needs to have started Microsoft Excel at least once because only then will a profile be created for the administrator.
- Microsoft Outlook Express must be installed on the server with an account defined for the user or administrator who runs the Microsoft SQL Server Agent. For this account, it is important that sending mail is possible while receiving mail is less important.

The most important setting in Exact Synergy Enterprise for running **Exact.Jobs.SysHrMail** can be found at Modules → HRM → Setup → General → Settings.

The screenshot shows the 'Server' configuration window with the following visible settings:

- Domain: New - People (Pre-Win2000):   use Active Directory  create Exchange Mailbox
- Organization: Unit (People):  Subdirectory:
- People: Outlook Web Access:
- Exchange: Domain:  (Separator = :)
- Exchange server version: Exchange Online (dropdown)
- Domain: New - Partner (Pre-Win2000):   use Active Directory
- Change password at next logon (People):
- Domain: New - Customer (Pre-Win2000):   use Active Directory
- Request: Portal access: Task (dropdown)
- E-mail:  Microsoft Outlook  SMTP
- Server: smtp.macbean.nl
- Port: 25
- Program: ID (Background - Process):  (Separator = :)
- OCS presence:

The **Server and Port** fields determine where the e-mails are sent to. Exact Synergy Enterprise is not a mail server and therefore requires a mail server, for example from the ISP or software like Microsoft Exchange, to get e-mails to their destination.

At **Server**, enter the name or IP address from the Microsoft Exchange server or the address of the mail server. The standard port for SMTP is “25”. However, this can change based on the settings of the mail server. When these settings are not filled in correctly or not left blank, **Exact.Jobs.SysHrMail** will not be able to send e-mails or perform exports to Microsoft Excel.

You can also set up where the documents resulting from a Microsoft Excel export are created in Exact Synergy Enterprise. You can access this at Modules → System → Setup → Settings - General → Processes. You can set a default main category, category, or subcategory for all types of Microsoft Excel exports.

For the deduplication process, the merge settings can be defined at Modules → Customers → Reports → Quality analysis → Deduplication where you can define the master settings, merge selection criteria, account merge conditions, and contact merge conditions.

## Reports and troubleshooting

When running **Exact.Jobs.SysHrMail**, the job will enter log entries which can be viewed at Modules → System → Reports → Log → Processes. There are a few error messages which are known to be displayed in Exact Synergy Enterprise. These are due to wrong settings either in Exact Synergy Enterprise or on the server itself. The following describes the error messages and solutions.

### Permission denied

This may be displayed when the application is unable to take control of a Microsoft Excel application instance it has created to perform Microsoft Excel exports for **HRM** or **Financial**. If you encounter this error, please check the DCOM security settings for the Microsoft Excel application object. This can be done by running **DCOMCNFG** from **Run** in the **Start** menu, selecting the Microsoft Excel application object, viewing its properties, and checking the rights under the **Security** tab.

### Permission error when performing single mail merge

In order to merge images when performing a single mail merge, a “TemplImages” folder will be created to temporarily store all images used during the single mail merge operation for all users. To ensure that you will not encounter the error message for permission rights during the single mail merge action, the following must be carried out:

- Rights to Microsoft Windows “temp” directory in C:\ is set for all users.
- “TemplImages” folder in C:\windows\temp is empty. Images in this folder will be deleted whenever the next user performs a single mail merge.

### Application-defined or object-defined error or Object variable or with block variable not set

This error message may be displayed when the user running the Microsoft SQL Server Agent is not a domain administrator or a local administrator. The user running the Microsoft SQL Server Agent must be a valid user in the Exact Synergy Enterprise database with the **Administrator** role and have administrative rights on the server or in the domain.

**Error at create report, report name ClassesGroupsActuals, type (Financial Excel Export), creator id (ServiceSQL0001). Error description – ActiveX component can't create object**

This error message may be displayed when the file **ClassesGroupsActuals.xls** is not found in the **rep** subfolder of the folder where Exact Synergy Enterprise is installed. If the file is not there, create an empty Microsoft Excel sheet with the name.

## 5.2.4 Exact.Jobs.CRM

**Exact.Jobs.CRM** can perform three functions using the following classes:

- **AccountStatus**
- **CRMRating**
- **updateaccountdatabases**

You can run all these functions in separate instances. As you can also specify the range for **updateaccountdatabase**, for example, you can run the job on separate account code ranges at the same time.

### AccountStatus

This class has two main processes:

- **Forecasts process** — **Associate** or **Not Validated** accounts with **Sales Forecast** requests, as well as inactive **Associate** or **Prospect** accounts linked with non-expired **Sales Forecast** requests in the **Open** or **Approved** statuses, are converted to **Prospect** accounts with the **Active** status. On the other hand, **Prospect** accounts without any **Sales Forecast** request are changed to **Not Validated** accounts.
- **Contracts process** — **Prospect**, **Associates**, **Not Validated**, and **Customer** accounts with active contracts are set as type **Customer**. In this case, those with active service items are set to the **Active** status while those without active service items are set to the **Passive** status. On the other hand, if a **Customer** account does not have any active contracts, the account is set to the **Inactive** status.

### CRMRating

Based on the totals of items and service values of each **Customer** or **Reseller** account (except those in the **Exit** status) and all its subsidiaries, **CRMRating** calculates the combined contract value and gives a rating from “1” (highest) to “7” (lowest) to the account based on Exact Synergy Enterprise rating rules.

### updateaccountdatabases

This is only applicable in an Active Service Provider (ASP) model where there is one central company-wide Exact Synergy Enterprise database for the ASP and separate databases for one or more customers of the ASP. The function of this class is to update the customer databases as necessary.

### Technical information

The following tables are involved when running the **AccountStatus** or **CRMRating** classes of **Exact.Jobs.CRM**:

- **cicmpy** — Accounts
- **Items** — Items
- **ItemNumbers** — Contracts
- **BacoSettings** — Last Run date (**AccountStatus**) or **CRMRatingLastRun** (**CRMRating**)
- **RatingAmounts** — Rating rules (**CRMRating** only)
- **RequestTypes** — Request types (**AccountStatus** only)
- **Requests** — Requests (**AccountStatus** only)

## AccountStatus

The following is the flow of the **Forecasts** process:

- First, it checks **Associate** and **Not Validated** accounts for linked **Sales Forecast** requests. If there are **Sales Forecast** requests linked and all mandatory fields of the account are filled, the account is set as a **Prospect** account with the **Active** status.
- After the first check is completed, it checks for **Prospect** accounts without any **Sales Forecast** requests linked and changes the account type to **Not Validated** with the **Not Validated** status.
- Then, in the third run, it checks for **Prospect** and **Associate** accounts that are not in the **Active** status but linked with active **Sales Forecast** requests that are in the **Open** or **Approved** status. For these accounts, if the mandatory account fields are filled, the accounts will be changed to type **Prospect** with the **Active** status.

The following is the flow of the **Contracts** process:

- First, it checks **Prospect**, **Associates**, and **Not Validated** accounts linked to contracts. For these accounts where the contracts are not active, the accounts are changed to type **Customer** with the **Inactive** status. If the contracts are active, the accounts are set to type **Customer** with the **Active** status for contracts with active service items or the **Passive** status if not.
- Then, in the second run, it checks **Customer** accounts for the same conditions and applies the same rules.

## Updateaccountdatabases

When Exact Synergy Enterprise is updated, the central database must first be updated. Then, all the customer databases must be updated. This can be done by going into Exact Synergy Enterprise environment for all these databases. Another option is to use the **updateaccountdatabases** class of **Exact.Jobs.CRM**.

For the **updateaccountdatabases** class, **Exact.Jobs.CRM** will go through all accounts in the central Exact Synergy Enterprise database for each account where a database is defined. The versions of these databases are then compared with the version of the installed Exact Synergy Enterprise and updated if necessary.

## Command syntax

The following is the command syntax for **Exact.Jobs.CRM**:

**Exact.Process.exe/ASSEMBLY:Exact.WordIndex/DBCONFIG:<database>/CLASS:<function> [/M:1] [/AC1:<start>] [/AC2:<end>] [/LIC:<path>]**

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/CLASS:<function>	Specifies the job function to perform where <function> is: <ul style="list-style-type: none"> <li>• <b>AccountStatus</b></li> <li>• <b>CRMRating</b></li> <li>• <b>updateaccountdatabases</b></li> </ul>
/M:1	If specified, this runs the <b>Contracts</b> and <b>Forecasts</b> processes for the <b>AccountStatus</b> class. Otherwise, it runs only the <b>Forecasts</b> process. Applicable only when <b>/CLASS</b> is <b>AccountStatus</b> .
/AC1:<start>	Specifies the start of the account codes range to update, including <start>. This can be used with <b>/AC2</b> . If used alone, all accounts with codes equal to or greater than <start> will be updated. If both <b>/AC1</b> and <b>/AC2</b> are not specified, all accounts will be <b>updated.Applicable</b> only when <b>/CLASS</b> is <b>updateaccountdatabases</b> .
/AC2:<end>	Specifies the end of the account codes range to update, including <end>. This can be used with <b>/AC1</b> . If used alone, all accounts with codes smaller than or equal to <end> will be updated. If both <b>/AC1</b> and <b>/AC2</b> are not specified, all accounts will be updated. Applicable only when <b>/CLASS</b> is <b>updateaccountdatabases</b> .
/LIC:<path>	Specifies the path and filename of the license file (for example, " <b>C:\Lic\NewLic.elc</b> ") to apply to customers database after updating. Applicable only when <b>/CLASS</b> is <b>updateaccountdatabases</b> .

## System settings

In order for proper operation of **CRMRating**, each rating must have an amount range linked to it. The rating rules for **Customer** and **Reseller** can be defined at Modules → Marketing → Setup → Rating: Rule. It is advisable to schedule **CRMRating** once a day at a less busy time. The application can only be executed by users with function right **337 - Allows to execute background rating application**. Users with the **Administrator** role have this function right.

## Reports and troubleshooting

To verify in Exact Synergy Enterprise whether errors were logged during execution of the jobs, go to Modules → System → Reports → Log → Processes where you can check whether the jobs have been executed properly.

## 5.2.5 Exact.Jobs.Documents

**Exact.Jobs.Documents** is a background job which performs four basic functions:

- If you upload a document with pictures into Exact Synergy Enterprise, the pictures in that document are also saved in the database. When you delete the document, the pictures remain in the database but there are no links to them. When this background job runs, it checks for pictures that are not linked to any document and deletes those pictures. This will ensure the database is not using too much disk space.
- At Modules → Documents → Reports → Statistics, you can view different overviews related to the documents in your database. For example, you can view the number of documents that are linked to the main categories. These overviews are updated every time the background job runs.
- When creating a document, you can enter a date after which the document expires. When the background job runs, it deletes all expired documents.
- The background job updates active document versions. When a new version is created for a certain document, this new version needs to be activated. This can be done manually by the creator or the administrator. It can also be done automatically by the background job.

### Technical information

The following tables are involved when running the **Documents** background job:

- **BacoDiscussions** — Documents
- **BacoDiscussionCounts** — Counts new documents
- **BDPictureRefs** — Links between documents and pictures
- **BacoDiscussionPictures** — Pictures

### Command syntax

The following is the command syntax for **Exact.Jobs.Documents**:

**Exact.Process.exe/ASSEMBLY:Exact.Jobs.Documents/CLASS:DocScheduler/DBCONFIG:**  
**<database> /C:<option>**

Command syntax	Description
/DBCONFIG: <database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/C:<option>	Specifies the job to perform where <option> is: <ul style="list-style-type: none"> <li>• <b>Counter</b> — Recalculates all document counts and removes the “New” indicator displayed in summary view of documents.</li> <li>• <b>DelExpiryDoc</b> — Removes documents based on document expiry date.</li> <li>• <b>Picture</b> — Removes pictures that are not used by any document.</li> <li>• <b>FillPicture</b> — Calculates all existing document references to pictures. This action is also executed when the <b>Picture</b> option is used but only for pictures where the <b>BDPictureFilled</b> value is “N”.</li> <li>• <b>DocVersions</b> — Updates the document versions and set the new version to “active” when versioning is added for a specific document.</li> </ul>



**Note:**

You can only add one specific **/C** parameter. Add a separate scheduled job for each parameter option you want to execute.

## System settings

To let the background job delete documents which have expired, you need to specify a date at the **Deletion** date field in the document properties while editing the document.

In order to make full use of the document version parameter, the version control functionality needs to be used in Exact Synergy Enterprise. Version control can be activated in a document type at Modules → Documents → Setup → Maintenance → Document: Types.

## Reports and troubleshooting

To verify in Exact Synergy Enterprise whether errors were logged during execution of the jobs, go to Modules → System → Reports → Log → Processes where you can check whether the jobs have been executed properly.

When checking those entries, you may see the following messages:

Info	BDScheduler	/S:VORS31266-1 /D:DeltaBike /C:Picture	WORS31266-1	No pictures cleaned up, because ref count is too low (575)
Info	BDScheduler	/S:VORS31266-1 /D:DeltaBike /C:Picture	WORS31266-1	Created 575 picture refs in conversion

**Exact.Jobs.Documents** is designed to start deleting pictures only when there are more than 1,000 pictures. If there are less than 1,000 pictures, the pictures are not deleted.

## 5.2.6 Exact.Jobs.SysLogTool

The **Exact.Jobs.SysLogTool** background job is responsible for truncating the log entries that have been made while using Exact Synergy Enterprise.

Every action from every user results in log entries being made in the database. Over time, this can result in a huge database where most of the size is due to log entries from several years ago. To prevent this, **Exact.Jobs.SysLogTool** can be used to reduce the size of the database by deleting old log entries. Apart from cleaning up old log entries, the background job also updates the overviews of page views for documents and applications. These overviews can be found at Modules → System → Reports → Page Views.

### Technical information

The following tables are involved when running **Exact.Jobs.SysLogTool**:

- **BacoProcessLog**
- **BacoAppLogDays**
- **BacoAppLogHours**
- **BacoAppLogApps**
- **BacoAppLog**
- **BacoErrorLog**
- **EbcDataLog**
- **CompanyLogs**
- **HRErrorLog**
- **XMLEvents**

**Exact.Jobs.SysLogTool** job checks for all log entries on the day they were created. If the entries were created past the number of days set in Exact Synergy Enterprise, the entries will be deleted from the table.

### Command syntax

The following is the command syntax for **Exact.Jobs.SysLogTool**:

```
Exact.Process.exe/ASSEMBLY:Exact.Jobs.SysLogTool/CLASS:SysLogTool
/DBCONFIG:<database>
```

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.

### System settings

There are no specific system settings required.

### Reports and troubleshooting

To verify in Exact Synergy Enterprise whether errors were logged during execution of the jobs, go to Modules → System → Reports → Log → Processes where you can check whether the jobs have been executed properly.

## 5.2.7 Exact.Jobs.ConProcess

In Exact Synergy Enterprise, you are able to create and maintain contracts for your customers. These contracts need to be prolonged at one point and doing this manually can be a lot of work. Therefore, a background job **Exact.Jobs.ConProcess** is created. This background job enables you to prolong contracts automatically at a certain date. The background job is also able to validate, modify, and budget the contract details.

When you create a contract for a customer, you must enter a prolongation date. This date determines when the prolongation of the contract will start. After the creation of the contract, the next thing to do is to prolong the contract after some time. At Modules → Customers → Reports → Contracts: Prolongation → Processes, you can indicate what the background job should do and which contracts should be taken into account. In the page below, you can see the available options.

From the page, you can see the **Validation**, **Modified**, and **Prolongation** buttons. These buttons determine what the background job does.

After entering the necessary information, you will find that an entry has been created. This entry is made for the background job. The next time **Exact.Jobs.ConProcess** runs, dependent on the scheduling, it will find the newly created entry and will perform the action requested.

History									
Type	Process	Status	Date	Person	Division	Info	Start	End	Document
<input type="checkbox"/>	Contract validation	New	09-06-2015	Antoine de Groot	602 - MacBean CoffeeWorld		01-05-2015	31-05-2015	<a href="#">E</a>
<input type="checkbox"/>	Contract prolongation	New	09-06-2015	Antoine de Groot	602 - MacBean CoffeeWorld		01-05-2015	31-05-2015	<a href="#">E</a>
<input type="checkbox"/>	Contract prolongation	New	09-06-2015	Antoine de Groot	602 - MacBean CoffeeWorld		01-05-2015	31-05-2015	<a href="#">E</a>
<input type="checkbox"/>	Contract revalidation	New	09-06-2015	Antoine de Groot	602 - MacBean CoffeeWorld		01-05-2015	31-05-2015	<a href="#">E</a>
<input type="checkbox"/>	Contract validation	New	09-06-2015	Antoine de Groot	602 - MacBean CoffeeWorld		01-05-2015	31-05-2015	<a href="#">E</a>

After **Exact.Jobs.ConProcess** has finished, the status of the entry will change from **New** to **Processed**. The results can be viewed by clicking on the link in the column type. When a document is created, there will also be a link in the **Document** column. Clicking on that link will show you the document with the results of the job.

## Technical information

The following database tables are involved when running **Exact.Jobs.ConProcess**:

- **ItemProcess** — This is where the application looks for jobs and enters the results
- **BacoDiscussions** — Document with results
- **Absences**
- **RequestTasks**
- **ItemNumbers**
- **BacoProcessLog** — Log entries for background job
- **EbcDataLog** — Log entries for changed data

## Command syntax

The following is the command syntax for **Exact.Jobs.ConProcess**:

**Exact.Process.exe/ASSEMBLY:Exact.Jobs.ConProcess/CLASS:ConProcess  
/DBCONFIG:<database>**

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.

## System settings

There are a number of settings in Exact Synergy Enterprise which have influence on the way **Exact.Jobs.ConProcess** works. To define the settings, go to Modules → Customers → Reports → Contracts: Prolongation → Parameters and click **New**.

### Contracts: Parameter 📄 ☆ ?

✕ Close
Save
Save + New

#### General

Division	<input type="text" value=""/> 🔍 ⚠
Valid - From	<input type="text" value="01-09-2016"/> 📅
Invoices	<input type="text" value=""/>
Invoice	<input type="text" value="Account"/> ▼
Currency	<input type="text" value="Division"/> ▼
Your ref.	<input type="text" value=""/>
Description	<input type="text" value=""/>
Selection code	<input type="text" value=""/>
Cost centre	<input type="text" value=""/> 🔍
Person	<input type="text" value=""/> 🔍

#### Settings

Prolongation	<input type="text" value="Current value"/> ▼
Frequency	<input type="text" value="Monthly"/> ▼
Period	<input type="text" value="12"/>
Price index	<input type="text" value="1.0000"/>
Document - Type	<input type="text" value="CSV"/> ▼
Use: Index	<input type="checkbox"/>

From this page, the contract prolongation settings can be entered per division. Apart from the process parameters, you need to set up the category which the document with results is created. This can be done at Modules → System → Setup → Settings - General → Processes.

System: Process types

Close

Page size  Show

Type ▲▼	Description ▲▼	Document		
		Document type	Security level	Priority
<a href="#">10</a>	Contract validation		10	3 - Medium
<a href="#">15</a>	Contract revalidation		10	3 - Medium
<a href="#">20</a>	Contract prolongation		10	3 - Medium
<a href="#">30</a>	HRM Excel export		10	3 - Medium
<a href="#">40</a>	CRM Excel export		10	3 - Medium
<a href="#">50</a>	Contract budget prolongation		10	3 - Medium
<a href="#">60</a>	Contract currency conversion		10	3 - Medium
<a href="#">70</a>	Logistics Excel export		10	3 - Medium
<a href="#">80</a>	Requests Excel export		10	3 - Medium

By clicking on one of the links in the **Type** column, you can set up the category in which the documents are created.

## Reports and troubleshooting

26-04-2005 09:59:01	End	BLProcess	/S:NT03 /D:488	NT04	
26-04-2005 09:59:01	Security	BLProcess	/S:NT03 /D:488	NT04	Service
26-04-2005 09:59:01	Start	BLProcess	/S:NT03 /D:488	NT04	

From the page, you see an error message that is given by the **Exact.Jobs.ConProcess** background job. The error occurred because the user who executed the Microsoft SQL Server Agent did not have the necessary rights to perform the prolongation. In this case, the user was "Service", so the error message consisted of the username of the user who was running SQL Server Agent.

## 5.2.8 Exact.Jobs.FinExchange

There are several ways of exchanging data between Exact Globe Next and Exact Synergy Enterprise. One of the methods includes a direct database link via a background job. Compared to an XML exchange, this job will give you improved performance and basic financial checks. However, you need to ensure that the master data between the source system, Exact Globe Next, and the target system, Exact Synergy Enterprise, is in sync. Via this background process, financial transactions and related documents are exchanged.

### Technical information

The following tables are involved when running the background exchange of data:

- Financial transactions
- Related documents

To keep each of the databases in sync with the other, a timestamp is stored in both the databases, indicating the last moment of data exchange. With every run of the background job, this timestamp will be updated. During replication, only records which have been modified after this timestamp will be exchanged.

### Command syntax

The following is the command syntax for **Exact.Jobs.FinExchange**:

**Exact.Process.exe/ASSEMBLY:Exact.Jobs.FinExchange/CLASS:FinExchange/DBCONFIG:<database> /C:<#1,...,#n> /B:<n> [/R:<yyyy>-<p>][/EG:<GUID>] [/BS:<scenario>]**

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/C:<#1,...,#n>	Lists the division codes to use for the data exchange. For multiple divisions, separate the division codes with commas.
/B:<n>	Indicates whether financial budgets need to be replicated where <n> is: <ul style="list-style-type: none"> <li>• <b>0</b> — Budgets will not be replicated.</li> <li>• <b>1</b> — Budgets are replicated.</li> </ul> If /B is not specified, option 1 is used.
/R:<yyyy>-<p>	Specifies to re-import a previously imported period where <yyyy> is year and <p> is period number (for example, 2007-2).
/EG:<GUID>	Specifies to export one single financial entry based on the entry GUID
/BS:<scenario>	Indicates the budget scenario to be used for replication.

### System settings

There are no specific system settings required.

## Reports and troubleshooting

If the process logged in Exact Synergy Enterprise shows that the background job has been executed for a specific company but no data was exchanged, it is possible that the timestamps in the different databases were not in sync.

The data exchange takes place based on timestamps. This can be checked via the following SQL query on both databases:

```
Select * from BacoSettings where SettingGroup= "100" and  
SettingName = "ImportTimestamp_synergy"
```

## 5.2.9 Exact.Jobs.FinCheck

The **Exact.Jobs.FinCheck** background job compares the financial figures in Exact Synergy Enterprise with Exact Globe Next back-office administrations.

### Technical information

For each division, the check is done per financial year, financial period, or general ledger account against whether the total amount in the division currency in Exact Synergy Enterprise is the same as the total amount in the division currency in the back-office administration.

**Note:**

The financial figures mentioned are referring to the processed financial entries only. In other words, budgets and unprocessed financial entries are not taken into account. Also, the origin of financial figures is not important for the check. It will take into account both the financial entries created in Exact Synergy Enterprise and the back-office administration.

Besides the checks, this application will also give information whether there are still financial entries waiting to be replicated from the back-office administration to Exact Synergy Enterprise.

This job can run automatically in the background on a scheduled basis. After each check, the results, success or failure, will be stored in the division log and the detailed information from the check will be stored in a newly created document. This document will be stored using the document type (in the default category mentioned in the definition of this type) defined in the financial settings for the import of documents attached to financial entries.

When the job runs, it will check the general ledger accounts of the databases belonging to Exact Synergy Enterprise and Exact Globe Next. The financial figures are compared and any differences are logged. The background job will not correct the differences. The administrator has to do corrections instead.

The following database tables are used:

- **BacoDiscussions** — Creating documents with results
- **Grtbk** — General ledger accounts
- **XMLTopicHistory** — Log with XML replication entries
- **BacoProcessLog** — Log with background job entries
- **gbkmut** — Financial transactions
- **BacoSettings** — Log of last run date
- **CompanyLogs** — Log per division)



## Command syntax

The following is the command syntax for **Exact.Jobs.FinCheck**:

```
Exact.Process.exe/ASSEMBLY:Exact.Jobs.FinCheck/CLASS:FinCheck /DBCONFIG:<database>
/C:<#1,...,#n>
```

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/C:<#1,...,#n>	Lists the codes of the divisions to check. For multiple divisions, separate the division codes with commas.

## System settings

To run this background job, function right **363 - Allows to import financial entries** from Exact Globe Next is required. Users with the **Administrator** role have this function right. The security level of the document will be defined by the document type used.

Before starting this background job, the following must be configured:

- Modules → HRM → Setup → Organization → Divisions: Select the divisions for which this background job must be executed and fill in the back-office details for each of them.
- Modules → Financial → Setup → General → Settings, under the **Import** section at **Document: Type** and under the **Import: Check** section at **Document: Deletion date**. It is useful to set a deletion date for the documents created by the check, so that these documents will be automatically deleted. This is done by setting the **Document: Deletion date**.
- Make sure that there is a default category configured for the selected document type and that the document type configuration should have the value **Yes (Optional)** for **Item, Assortment, Person, Account, Project, and Financial**.

## Reports and troubleshooting

The results of the financial comparison can be accessed at Modules → Financial → Reports → Analysis → Division: Status.

- **Divisions - Status** — This is referring to the data in the **Check** column. Clicking the date hyperlink displays the document with the detailed information.
- **Division log** — Click the **Log** hyperlink in the **Action** column. Next, select **Financial (Check)** at **Source**. Clicking the hyperlink in the **Remark** column displays the document with the detailed information.
- **Data management** — Click the **Management** hyperlink in the **Action** column.

## 5.2.10 Exact.Jobs.FinPending

The **Exact.Jobs.FinPending** background job validates and processes financial transactions that are imported from Microsoft Excel via the **Exact.Jobs.FinExcel** background job. This background application needs to be executed only when financial data is imported via Microsoft Excel sheets. For example, if the financial data is imported on a Friday, the background job needs to be executed only on that Friday evening or during the weekend.

Depending on the frequency of import for these financial transactions, the **Exact.Jobs.FinPending** background job can adhere to the same frequency as **Exact.Jobs.FinExcel** but after the import is completed.

### Technical information

The following tables are involved when running **Exact.Jobs.FinPending**:

- **TransactionsPending** — This is the table where the transactions are located after being imported from Microsoft Excel sheets.
- **gbkmut** — This is the table where the transactions are located after running **Exact.Jobs.FinPending**.
- **BacoProcessLog** — A log entry is created in this table.

During the import, the transactions will first be placed in the **TransactionsPending** table because these transactions have the “Unprocessed” status. The **Exact.Jobs.FinPending** background job will then validate these transactions and process them.

**Exact.Jobs.FinPending** first checks the **TransactionsPending** table for transactions that are entered manually. Transactions that are imported from Microsoft Excel sheets are also recognized as this. These transactions will be compared with the existing transactions in **gbkmut**, based on **EntryNo**. If there are existing transactions with the same **EntryNo**, then those transactions will be deleted.

Subsequently, after the checks have been performed, the imported transactions will be moved from the **TransactionsPending** table to the **gbkmut** table where all processed transactions are stored. The transactions in the **TransactionsPending** table will be deleted when the move is successful. The transactions are then regarded as **Processed**.

### Command syntax

The following is the command syntax for **Exact.Jobs.FinPending**:

```
Exact.Process.exe/ASSEMBLY:Exact.Jobs.FinPending/CLASS:FinPending
/DBCONFIG:<database> /C:<#1,...,#n>
```

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/C:<#1,...,#n>	Lists the codes of the divisions to perform this job. For multiple divisions, separate the division codes with commas.

### System settings

There are no specific system setting required. However, the background job will only validate transactions that are available.

## Reports and troubleshooting

If you have executed the background job, you may still see many entries available at Modules → Financial → Entry → Transactions → Process. Although **Exact.Jobs.FinPending** can help to process valid entries, there are some entries that it cannot process automatically. You will need to complete these manually.

### 5.2.11 Exact.Jobs.FinExcel

There are several ways of exchanging data between Exact Globe Next and Exact Synergy Enterprise. One of the means is the import of a Microsoft Excel file which is attached to a document. The imported entry can be stored as a budget entry or as an actual financial entry.

#### Technical information

Your users can create documents in specific categories and the attachments of these documents can be imported as financial entries via this background job. Based on the document type, it can be determined whether a budget or actual transaction has been imported.

The table involved in the creation of entries is **gbkmut**.

#### Command syntax

The following is the command syntax for **Exact.Jobs.FinExcel**:

**Exact.Process.exe/ASSEMBLY:Exact.Jobs.FinExcel/CLASS:FinExcel/DBCONFIG:<database> [/C:<#1,...,#n>]**

Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/C:<#1,...,#n>	Lists the codes of the divisions to execute the import and exclude documents of other divisions. For multiple divisions, separate the division codes with commas.

#### System settings

There is no specific system settings required.

#### Reports and troubleshooting

To verify in Exact Synergy Enterprise whether errors were logged during execution of the jobs, go to Modules → System → Reports → Log → Processes where you can check whether the jobs have been executed properly.

## 5.2.12 Exact.Jobs.SysExchange

The **Exact.Jobs.SysExchange** background job allows you to replicate appointments from the calendar in Exact Synergy Enterprise to the calendar in Microsoft Outlook and vice versa.

This means that appointments have to be entered only once, either in Exact Synergy Enterprise or Microsoft Outlook, to be registered in both environments. Therefore, when a company is already using Microsoft Outlook to register appointments, the replication will ensure that the appointments are shown in Exact Synergy Enterprise as well.

### Technical information

**Exact.Jobs.SysExchange** does not exchange calendar entries with the Microsoft Outlook client but with the Microsoft Exchange server.

**Note:**

If you are using Microsoft Exchange Server 2010 or higher, you need to install Exact Exchange Integrator to implement the Exchange calendar synchronization. For more information, see 7.8 *Exact Exchange Integrator*.

The following tables are involved when running **Exact.Jobs.SysExchange**:

- **humres**
- **BacoSettings**
- **Absences**

When **Exact.Jobs.SysExchange** is running, it checks the people that have turned on the flag for synchronization. This is checked in **humres** where **SynchronizeExchange** will indicate whether the calendar of the person needs to be synchronized. The value “1” indicates that synchronization needs to be carried out while the value “0” indicates that no synchronization is required. In **BacoSettings**, **Exact.Jobs.SysExchange** checks whether the person has specified additional request types to be synchronized with Microsoft Exchange.

Depending on the direction set for the synchronization, **Exact.Jobs.SysExchange** will create activities in Microsoft Outlook for all selected request types. When the synchronization is done in both directions, activities from Microsoft Outlook will be created according to the request types selected in Exact Synergy Enterprise.

## Command syntax

The following is the command syntax for **Exact.Jobs.SysExchange**:

**Exact.Process.exe/ASSEMBLY:Exact.Jobs.SysExchange/CLASS:SysExchange  
/DBCONFIG:<database>/E:<exchange>/DST:<n> [/M:<n>] [/L:<file>] [/CD:<n>] [/X:<n>] [/A:<n>]**


Command syntax	Description
/DBCONFIG:<database>	The virtual directory of the database as in the <b>db.config</b> file. Take note that the name of the virtual directory is case-sensitive.
/E:<exchange>	Specifies the name of the Microsoft Exchange server that stores the mailboxes.
/DTS:<n>	Specifies Daylight Saving Time adjustments where <n> is: <ul style="list-style-type: none"> <li>• <b>0</b> — Adjustment without DST time format, recurring appointments will not be updated.</li> <li>• <b>1</b> — Adjustment according to DST time format, recurring appointments will not be updated.</li> <li>• <b>2</b> — Adjustment according to DST time format, recurring appointments will be updated.</li> </ul>
/M:<n>	Specifies whether to block user from logging in after failures where <n> is: <ul style="list-style-type: none"> <li>• <b>0</b> — Report login failures and stop after 10 login failures.</li> <li>• <b>1</b> — Report login failures and do not stop after 10 login failures.</li> <li>• <b>2</b> — Do no report login failures and do not stop after 10 login failures. If <b>/M</b> is not specified, option <b>0</b> is used.</li> </ul>
/L:<file>	Specifies the full path and file name of the file where an extensive log is to be written (for example, "C:\Log\ExchangeLog.txt").
/CD:<n>	Includes cycle through people where <n> is: <ul style="list-style-type: none"> <li>• <b>0</b> — Both synchronization and deletion are enabled.</li> <li>• <b>1</b> — Synchronization enabled, deletion disabled.</li> <li>• <b>2</b> — Synchronization disabled, deletion enabled.</li> </ul> <p>If <b>/CD</b> is not specified, option <b>0</b> is used.</p>
/X:<n>	Specifies the synchronization type where <n> is: <ul style="list-style-type: none"> <li>• <b>0</b> — Synchronize both calendar and contacts.</li> <li>• <b>1</b> — To synchronize contacts only.</li> <li>• <b>2</b> — To synchronize calendar only.</li> </ul> <p>If <b>/X</b> is not specified, option <b>0</b> is used.</p>
/A:<n>	Specifies server option where <n> is: <ul style="list-style-type: none"> <li>• <b>0</b> — There is only one Microsoft Exchange server.</li> <li>• <b>1</b> — There are multiple Microsoft Exchange servers.</li> </ul> <p>If <b>/A</b> is not specified, option <b>0</b> is used.</p>

## System settings

You can decide whether synchronization of the calendar with Microsoft Outlook is required by a setting on your personal card. To do this, click **Edit** while viewing your personal card and select or clear the **Synchronize calendar** check box under the **Office** section.

**Office**

Phone / Extension	<input type="text" value="+31 26 264 7000"/>	<input type="text" value="1013"/>
Mobile / Mobile extension	<input type="text" value="+31 511 606 057"/>	<input type="text"/>
Fax	<input type="text" value="+31 26 264 7001"/>	
E-mail	<input type="text" value="adgroot@macbeancoffeeworld.com"/>	
Skype ID	<input type="text"/>	
MSN ID	<input type="text"/>	
Contractual location	<input type="text" value="MAAS"/> <a href="#">Main Office Maastricht</a>	
Physical location / Room	<input type="text" value="MAAS"/> <a href="#">Main Office Maastricht</a>	<input type="text" value="1013"/>
Time zone	<input type="text" value="0"/> <a href="#">(UTC) Universal Coordinated Time</a>	
IP Address	<input type="text"/>	
ISP Account	<input type="text"/>	
Synchronize calendar	<input type="checkbox"/>	

You can specify more extensive synchronization settings by clicking  **Customize** while viewing your **Calendar**. You can choose to synchronize contact persons from Exact Synergy Enterprise with Microsoft Outlook or vice versa under the **Synchronize: Contacts (MS Exchange)** section. The first time **Exact.Jobs.SysExchange** runs, it will only synchronize the contact persons from Exact Synergy Enterprise with Microsoft Outlook. Only the contact persons for which you are the account manager of will be synchronized.

Whenever the information for a contact person in Microsoft Outlook is changed, the changes will also be applied to the contact in Exact Synergy Enterprise. Contact persons which were already created in Microsoft Outlook will not be synchronized to Exact Synergy Enterprise as they might be private contact persons.

In Exact Synergy Enterprise, you can indicate whether appointments need to be synchronized with the Microsoft Outlook calendar. By default, all request types with the **Calendar** check box selected at **Request types** in the request type definition will be synchronized with Microsoft Exchange.

**Show**

Request types: Calendar <input checked="" type="checkbox"/>	Public holidays <input checked="" type="checkbox"/>
70 - Appointment	
71 - Appointment with response	
5004 - Training request	
5011 - Exit interview	
5012 - Special leave	
5014 - Unpaid leave	
5015 - Vacation	
5020 - Test/exam planning	
6010 - Appointment with response	
6011 - Appointment	
7001 - Hour planning & realization	
7008 - Hour planning & realization (IC)	
Request types: Other <input type="checkbox"/>	Synchronize <input type="checkbox"/>
Request types: Other <input type="checkbox"/>	Synchronize <input type="checkbox"/>
Request types: Other <input type="checkbox"/>	Synchronize <input type="checkbox"/>
Request types: Other <input type="checkbox"/>	Synchronize <input type="checkbox"/>
Request types: Other <input type="checkbox"/>	Synchronize <input type="checkbox"/>

Users can add certain request types which will be synchronized by selecting the request types at **Request types: Other**.

The administrator in Exact Synergy Enterprise can set up the types of request that need to be created when an activity is imported from Microsoft Exchange. This can be done via Modules → System → Setup → Settings - General → Calendar.

The screenshot shows the 'Calendar: Settings' dialog box. At the top, there is a title bar with the text 'Calendar: Settings' and three icons: a close button, a star, and a help icon. Below the title bar, there are two buttons: 'Close' and 'Save'. The main content area is divided into two sections. The first section is titled 'Request' and contains a 'Type' dropdown menu with the value '70' selected. To the right of the dropdown is a search icon and the text 'Appointment'. The second section is titled 'Synchronise' and contains two input fields: 'Days: Start' with the value '7' and 'Days: End' with the value '90'.

In addition, the administrator can also set up the range used for synchronizing appointments between Microsoft Exchange and Exact Synergy Enterprise.

Apart from the settings in Exact Synergy Enterprise, there are also settings which need to be checked on the Microsoft Exchange server via the Microsoft Exchange System Manager.

## Reports and troubleshooting

To verify in Exact Synergy Enterprise whether errors were logged during execution of the jobs, go to Modules → System → Reports → Log → Processes where you can check whether the jobs have been executed properly.



### 5.2.13 Exact.Jobs.Workspaces

**Exact.Jobs.Workspaces** is a background job that will automatically generate thumbnails for workspaces. These thumbnails are displayed when viewing the catalog of workspaces or when viewing a list of workspaces that you have searched for via the top menu of your Exact Synergy Enterprise.

This background job will only generate thumbnails for new workspaces, and regenerate thumbnails for workspaces that have been modified. If a person has checked out a workspace to make changes to it, but has yet to check in the workspace, only that particular person will be able to see the changes reflected in the thumbnail. For existing workspaces that do not have any change, the thumbnails will not be regenerated.

#### Command syntax

The following is the command syntax for **Exact.Jobs.Workspaces**:

```
<ESE installationfolder>\bin\Exact.Process.exe /DBCONFIG:<virtualdirectory>
/ASSEMBLY:Exact.Jobs.Workspaces /CLASS:WorkspaceThumbnailGenerator
```

Command syntax	Description
/DBCONFIG:<database>	This refers to the entry in the db.config file that contains the information about the location and the name of the database. Take note that the name of the virtual directory is case-sensitive.
/ASSEMBLY	This refers to the storing of respective functions in the DLL.
/CLASS	This refers to a specific function or task within the DLL.

# 6. SECURITY CONSIDERATIONS

With an e-business application like Exact Synergy Enterprise, security measures are necessary to ensure that business critical information is safe. This section will discuss security in relations to the infrastructure used to run Exact Synergy Enterprise as well as address other perspectives. Every organization conducting business over the Internet should consider the impact and risks of insufficient security measures. Security in relation to Information Technology is much more than what is described here. However, these measures are known to enhance security in a way that this is comfortable and more than acceptable for most commercial companies.

References:

- <http://www.sans.org>
- <http://www.sans.org/rr/papers/44/1309.pdf>
- <http://www.sans.org/rr/papers/53/543.pdf>

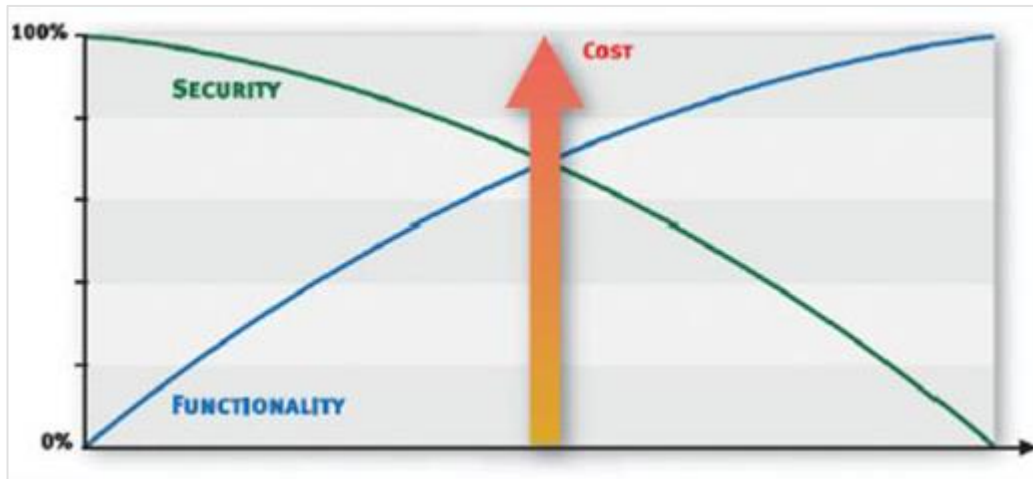
## Balancing Security, Functionality, and Cost

When considering security, you must optimize security while still providing flexibility in functionality. In general, one can say that the safest computer is one that is not attached to any network. While this results in maximum security, the advantages of using shared resources on a network are lost. The other extreme is to open all services to the entire Internet, allowing all functionality to be accessed by anyone. However, it has high risks of attacks from viruses, spyware applications, or other malicious programs, in addition to leaving sensitive information unsecured.

The following diagram illustrates the dichotomy of security and functionality, as well as the factor costs. This diagram shows that ultimate security results in virtually no functionality, and ultimate functionality results in poor security. The goal is to establish a balance between functionality and security that allows the organization to conduct business efficiently without compromising on business critical information and processes. The third aspect is cost. While the optimal balance can be reached in most cases, it will often result in high IT costs.

The two main points to consider are:

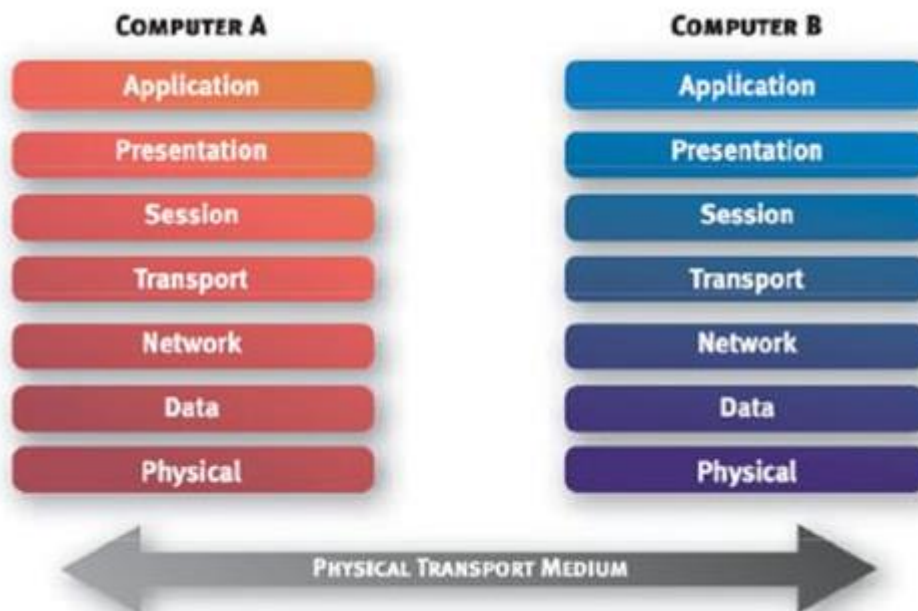
- whether it is worth the risk not to spend on security, and
- whether the costs actually contribute to a safer environment or result in improved continuity in any other form.



### ISO or OSI Multilevel Security

A secure environment is not accomplished with a single security measure. To ensure security throughout an organization, numerous technical, organizational, and procedural measures must be taken. The different steps that can be taken will be handled in a structured manner using the ISO/OSI reference model. This model describes communication of IT solutions over a seven-layer model. The lowest level represents the hardware level and the highest represents the application layer. All layers will be described in details.

However, this document is not about the model but only using the model to give the different measures a place in a commonly known framework. Furthermore, two extra layers are added to the model to better explain security as a holistic concept.



## 6.1 PHYSICAL LAYER

In the ISO or OSI model, this layer is responsible for handling the physical connection between end points. It is about voltages and wavelengths. In the perspective of security and Exact Synergy Enterprise, measures that relate to security on a hardware level should be considered.

### 6.1.1 Secure server rooms

Physical access to a server gives a person access to all information stored on the server. Still, a lot of companies leave their business critical information wide open to everyone with access to the building. Keep your server in a locked and preferably cooled room. The physical connections between computers that form the network are also vulnerable to attacks. A network wire, router, or switch that is hijacked can be abused with the right equipment and knowledge.

### 6.1.2 Failover systems and redundancies

If there are high demands on availability, investments in failover systems can be worthwhile. The idea of failover is in essence very simple. All single points of failures are made redundant by adding a second piece of hardware. In practice though, it can be quite complicated. With regard to Exact Synergy Enterprise, examples of redundancies are:

- having at least two web servers,
- having redundant Internet connections, and
- clustering the Microsoft SQL Server on which the database is running.

These measures can be quite costly to implement within the company. However, more and more companies outsource these types of services to specialized hosting partners. One could also consider power failure measures when discussing redundancies. A server that loses its power is likely to lose data.

### 6.1.3 Backup systems

Making backups of business critical data also seems very obvious, but in practice even larger companies are suffering setbacks because of hardware failures and an insufficient backup policy. In the backup procedure, it also provides a thorough testing mechanism to ensure that backups are useful when required.

### 6.1.4 De-militarized zones

De-militarized zones (DMZ) are used as a buffer zone between the Internet and the intranet in which services offered should be accessible over the Internet. Examples of services that are normally offered in a DMZ are web services, File Transfer Protocol (FTP) services, and e-mail services. People should have access to these services. However, if a security breach occurs, unauthorized users should only have access to resources within the DMZ and not to resources in the intranet where the critical data resides. Firewalls or routers are used to create DMZs.

### 6.1.5 Intranet and Internet

There is a clear distinction between the intranet and Internet. The intranet hosts all network resources that belong to the company. In some cases, Exact Synergy Enterprise should not be published to the public Internet. In these cases, Exact Synergy Enterprise can be used as an intranet solution without any problems. Some of the benefits, such as working at home, will then be disabled. Further on we will show you how to circumvent this.

### 6.1.6 Other measures

Several other security measures can be given a place in this layer. Take note that these measures and others belong to more than one layer:

- Biometric scanners (iris scan and finger print scan)
- Video and audio surveillance
- Electronic access mechanisms for locking and logging
- Personal Identification Number (PIN) and password protection in combination with card reader systems

## 6.2 DATA LINK LAYER

The data link layer is the domain of Virtual Local Area Networks (VLAN), Wide Area Network (WAN) protocols like Asynchronous Transfer Mode (ATM), and Frame Relay. Wireless protocols like 802.11 also belong to this layer. This layer has long been neglected from a security point of view.

## 6.3 NETWORK LAYER

This layer handles data routing by sending outgoing packets, in the right direction and to the right destination, and receiving incoming data packets. The network layer handles routing and forwarding, and operates on the Internet Protocol (IP) level. It is also the last layer with a direct relationship to the physical aspect of networking, which is the addressing of network devices.

### 6.3.1 Firewalls and IP filtering

The primary form of a firewall operates on this level. Any firewall can filter inbound and outbound IP traffic based on IP addresses or IP domains. For an Exact Synergy Enterprise environment, this type of filtering will be useful, but only when it is combined with the filtering of a higher level in the ISO or OSI model.

### 6.3.2 Internet Protocol Security

The Internet Protocol Security (IPSec) encrypts IP traffic between hosts and thus, provides data protection. Data is not normally encrypted this way on the Internet. Instead, it is normally handled with the Secure Socket Layer (SSL).

### 6.3.3 Proxy servers

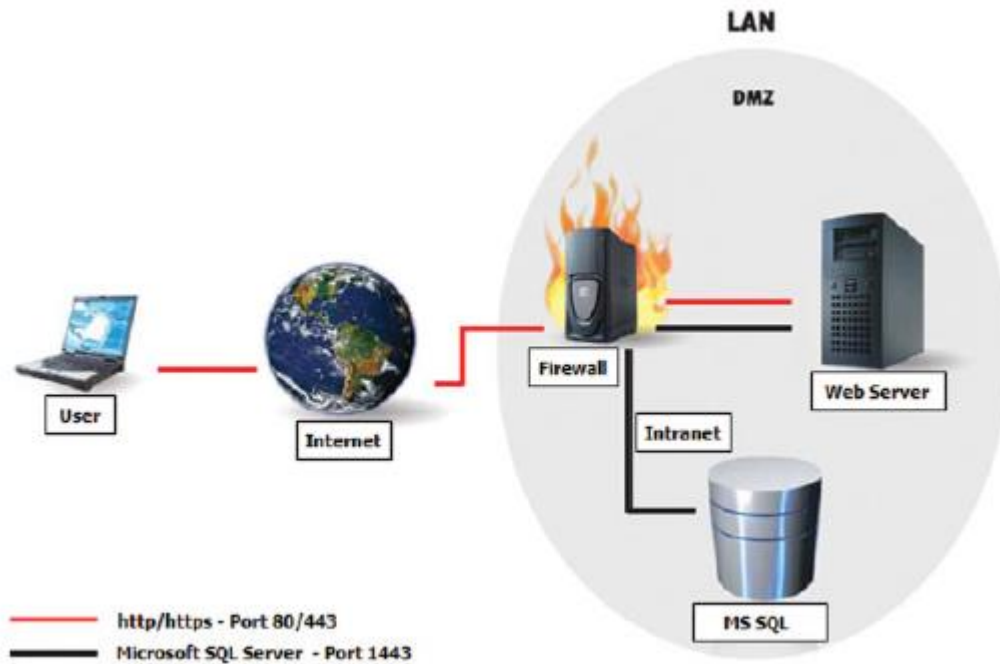
A proxy server is used for two reasons:

- caching of frequently visited web sites to reduce Internet traffic, and
- providing a single point of access to network services outside the intranet and thereby, providing control.

For Exact Synergy Enterprise, this could be useful in cases where environments are hosted outside the internal network. However, the proxy server itself will not enhance the security of the Exact Synergy Enterprise environment.

## 6.4 TRANSPORT LAYER

This layer manages the end-to-end control, such as determining whether all packets have arrived and error checking. It ensures complete data transfer. On this level, a firewall is most likely used to filter traffic on several levels. The following diagram gives a simplified illustration of the traffic between the client, the web server, and the Microsoft SQL Server.



### 6.4.1 Virtual Private Networking tunnel and encapsulation

Virtual Private Networking (VPN) is a technique that enables computers that are on the Internet to virtually become a part of the intranet over an encrypted tunnel set up from the client. Using a VPN client, a connection can be established with the internal network on which Exact Synergy Enterprise is running. After the connection has been set up, you can access Exact Synergy Enterprise just as if you were in the office. A standard VPN client is available within the Microsoft Windows operating system but there are several other VPN host/client applications on the market as well.



## 6.4.2 Secure Socket Layer

The disadvantage of a VPN connection is that the client needs to have a VPN client installed that needs to be configured. Since Exact Synergy Enterprise may be used by all levels of users, including those who may not be highly computer literate, this could cause a lot of overhead on support departments.

Another method called Secure Socket Layer (SSL) is available especially for web services. It requires almost no extra effort on the client side but still boosts security extensively. SSL is built upon Public Key Infrastructure (PKI) and provides a layer between the Hypertext Transfer Protocol (HTTP) and the Transmission Control Protocol (TCP).

There are three major advantages of using SSL to secure an Exact Synergy Enterprise environment:

- It is used the same way that web sites running HTTP are used. The end user only needs to type “https” in front of the URL instead of “http” so there is no extra overhead for instructing end users.
- Traffic over HTTPS is encrypted, unlike traffic over HTTP. It is almost impossible to decrypt intercepted messages.
- A three-way trust relationship is set up between the client, the server, and an independent issuer of the SSL key that ensures the client that the server belongs to the company it claims to be.

## 6.4.3 Firewalls, network ports, and protocol filtering

The firewall operates on different levels in the model. However, it can be used most effectively in the transport level. The firewall in this level can be used to filter on protocols like TCP, User Datagram Protocol (UDP), Internet Control Message Protocol (ICMP), and on sub protocols like TCP/UDP port numbers.

The ports used for the transport layer protocols represent a service running on a server. Each service “listens” to a specific port, waiting to take action upon network requests. Commonly used ports are Port 80 for HTTP, Port 25 for Simple Mail Transfer Protocol (SMTP), and Port 21 for FTP. The idea is to configure the firewall in such a way that only traffic for a certain service (transport layer filter on port) is allowed to a certain address or address range, and into a certain direction (network level filter on address or address range in certain direction).

The preceding diagram showed a simplified scheme of the port numbers that should be opened on the firewall for an Exact Synergy Enterprise environment. The following table shows all relevant port numbers:

Source	Destination	Port number	Comment
Client PC	Web server	80 TCP	HTTP for traffic over the Web
Client PC	Web server	443 TCP	HTTPS for secure web traffic
Web server	SQL server	1433 TCP & UDP	SQL server (default)
Web server	Domain controller	137 & 139 TCP 389 & 3268 TCP	NetBIOS LDAP (3268 only occasionally)

## 6.5 SESSION LAYER

The realm of password recognition, Kerberos, biometrics, hardware tokens, and software tokens; this layer sets up, coordinates, and terminates conversations, exchanges, and dialogs between the applications at each end. It deals with session and connection coordination. A lot of functionalities of mechanisms in the other layers have functions in this layer.

## 6.6 PRESENTATION LAYER

This layer, usually part of an operating system, converts incoming and outgoing data from one presentation format to another. For example, the presentation layer converts a text stream into a window with the newly arrived text. Sometimes called the syntax layer, encryption mechanisms like SSL functions also run on this level. From an Exact Synergy Enterprise maintenance point of view, not much influence can be exercised on this level.

## 6.7 APPLICATION LAYER

This is the layer at which communication partners, quality of service, user authentication and privacy, and any constraints on data syntax are identified. In the context of this section, measures with regard to the hosting operating systems will also be handled.

### 6.7.1 Operating Systems

Exact Synergy Enterprise is highly dependent on the Microsoft technology. Because of this, several security measures on this level are to be handled as well. Several measures should be taken to optimize security:

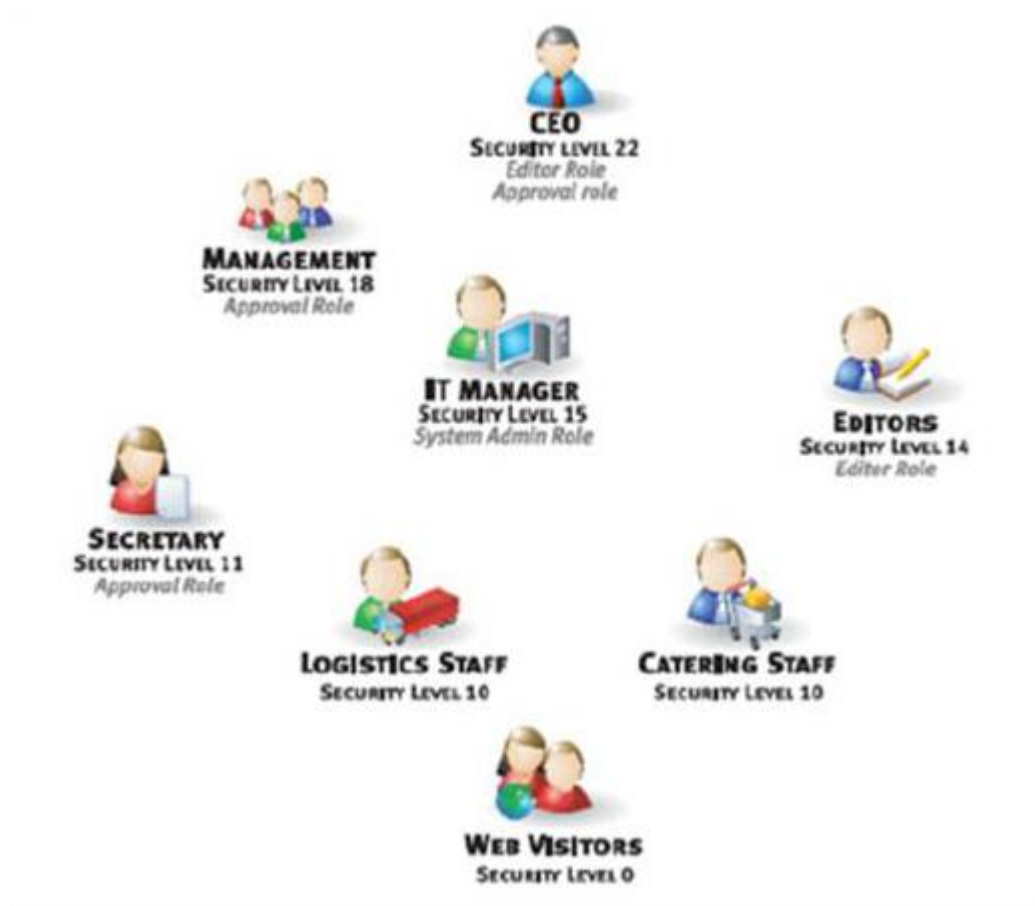
- Minimize the functionalities activated on the web server:  
Microsoft Internet Information Services (IIS) comes with several “handy” features that increase vulnerability. Install only the minimum features necessary for running Exact Synergy Enterprise.
- Install service packs, hot fixes, and patches provided by Microsoft on a regular basis:  
Microsoft operating systems comes with a tool called Automatic Update that helps system maintainers keep the system up-to-date. Updates should be installed on the client PCs, the web servers, the Microsoft SQL Server, and any other server on the network.
- Network management:  
Make sure people do not have more rights on the domain than necessary.
- Install the minimum components necessary:  
Microsoft operating systems come with a lot of additional features that undermine security. A general rule for configuring operating systems for both performance and security is to install or activate only the necessary components to run Exact Synergy Enterprise.

## 6.7.2 Exact Synergy Enterprise

Exact Synergy Enterprise is designed to share information throughout an organization, providing an integrated solution for organizational processes. Because of this philosophy, Exact Synergy Enterprise is very open, unlike most traditional programs where many areas are shielded unless people get access to them. People can perform a lot of actions and have access to a lot of information using this product.

The Exact Synergy Enterprise program has two methods that can be used simultaneously to shield functionalities and information:

- **Security Level** — A vertical structured way of shielding information.
- **Roles and Function rights** — A horizontal structure that gives access to functionalities to whomever that has the appropriate role.



## Security levels

Security levels specify who is allowed to see or create something. For example, when a user has security level 12, the user will be able to see everything equal to or lower than security level 12 but not something that has a security level higher than 12.

Security levels are pretty straightforward. However, there are some specific security levels that provide more flexibility in the system. An example of such a security level is the HR-specific security level (100). A document that is set to security level 100 will only be visible to the linked person, the manager of the person, and people with specific HR roles.

Level	Description	Who can access and/or modify	Portal
0	All	Everyone can view the information	External
1	Customers	<ul style="list-style-type: none"> <li>All customers</li> <li>All partners</li> <li>All employees</li> </ul>	<ul style="list-style-type: none"> <li>Customer</li> <li>Reseller</li> <li>Employee</li> </ul>
2	Partners	<ul style="list-style-type: none"> <li>All partners</li> <li>All employees</li> </ul>	<ul style="list-style-type: none"> <li>Reseller</li> <li>Employee</li> </ul>
3	Customer (Specific)	<ul style="list-style-type: none"> <li>The customer linked as the account</li> <li>The reseller of the linked customer</li> <li>The partner linked as the account</li> <li>All employees</li> </ul>	<ul style="list-style-type: none"> <li>Customer</li> <li>Reseller</li> <li>Reseller</li> <li>Employee</li> </ul>
4	Partner (Specific)	<ul style="list-style-type: none"> <li>The reseller of the customer in the request</li> <li>The partner linked as the account in the request</li> <li>All employees</li> </ul>	<ul style="list-style-type: none"> <li>Reseller</li> <li>Reseller</li> <li>Employee</li> </ul>
5-9	Not used	Not applicable	N/A
10-98	Internal	<ul style="list-style-type: none"> <li>The creator or owner</li> <li>The linked person</li> <li>Users with equal or higher security level</li> </ul>	<ul style="list-style-type: none"> <li>Employee</li> <li>Employee</li> <li>Employee</li> </ul>
99	Creator	<ul style="list-style-type: none"> <li>The request creator</li> <li>The current actor of the request</li> </ul>	<ul style="list-style-type: none"> <li>Employee</li> <li>Employee</li> </ul>
100	Person (Specific)	<ul style="list-style-type: none"> <li>The creator or owner</li> <li>The linked person</li> <li>The manager of the linked person</li> <li>People with HR and HR assistant roles based on the division of the linked person</li> </ul>	<ul style="list-style-type: none"> <li>Employee</li> <li>Employee</li> <li>Employee</li> <li>Employee</li> </ul>
101	Project (Specific)	<ul style="list-style-type: none"> <li>The creator or owner</li> <li>Members of the linked project</li> </ul>	Employee and Reseller

## Roles and function rights

In addition to the security level, any user can also be a member of one or more functional roles which grants this user extra rights in a specific part of Exact Synergy Enterprise. The roles consist of function points that are actually the entry points to certain functionalities. Role levels can give access of up to five levels.

Level	Description
Corporate	Gives access to all entities throughout the environment.
Group	Divisions can be grouped. This level gives access to all divisions belonging to the same group that the user's division belongs to.
Division	Gives access to entities within the user's division.
Cost center group	These are cost centers within a division. These cost centers can be grouped similarly to divisions. Having a role on this level will give access to all cost centers in this cost center group.
Cost center	Gives access to entities in the user's cost center.

Examples of what function rights can give access to:

- HR-specific information (absence overviews, contracts, salary slips)
- Financial information on meta level (Balance, P&L, Aging analysis)
- Maintenance applications on meta- and actual data

## 6.8 USER LEVEL

This level is not part of the ISO/OSI model. However, to fully understand what security is about, it is necessary to add this level. The weakest link in the whole security structure is humans. No matter how well shielded all systems are, human errors and human trust can still make security fail. A few examples are:

- Passwords consisting of partners, children, and pets.
- Passwords that are taped to monitors.
- Leaving a PC unguarded while logged on to the system.
- Giving the password to someone who is calling and claiming to work for the helpdesk.

Although some technical measures to mitigate these dangers will be discussed, the most important thing is to create awareness among users. People learn to lock their houses when they leave for work in the morning. They lock their cars and put their money in a bank. Why? Over the years, humans have learned to do these things to protect their assets. Nowadays, information is also an asset, and it should be taken care of in that perspective.

### 6.8.1 Having something and knowing something

The principle of having something and knowing something is a common security measure. The best example of an implementation of this system is the electronic cash withdrawal system. With your card, you can withdraw cash from a machine if you have the card and know the PIN code. With only one of the two, you cannot withdraw cash. Similar systems exist for network systems. People only get access to the network by having something and knowing something.

Card reader systems, fingerprint scanners, and USB keys are all devices used in combination with a password. Of course, it is also possible to just have something to get access, but then again if a malicious user could get a hold of that thing, he could easily get unauthorized access.

### 6.8.2 Password policies

In **Active Directory**, it is fairly simple to ensure that passwords are not so easy that other people can guess them. With the help of the Microsoft security model called Policies, or, in **Active Directory** terms, Group Policy Objects, an administrator can configure the system so that certain rules are applied when defining passwords. These rules have an effect on:

- The minimum length of a password.
- The complexity of the password.
- The maximum period of time a password can be used before it must be changed.
- The minimum period of time before a password can be changed.
- The password history, or the number of different passwords that should be used before a password can be re-used.

### 6.8.3 Automatic logoff

With the help of Group Policy Objects, it is also possible to force PCs to log off automatically after a certain period of inactivity. This prevents the computer from being hijacked if people walk away from it without logging off. This can also be achieved in combination with a USB key system. The system will automatically log off when a user removes the USB key.



## 6.9 POLICIES AND PROCEDURES

As stated earlier, despite all advanced technological measures, the system still is most vulnerable at the user level. Apart from steering the behavior through technical measures, it is most important that people are aware of the consequences that security breaches can have for a company and themselves.

Normally this awareness consists of:

### 6.9.1 Education

Since the appearance of the PC on virtually every desk at companies, a division has been created between people who know and people who do not know. One of the modern threats in the world is the inability to handle computers. Educating people about computers goes beyond teaching them how to operate the different applications. A certain amount of energy should also be invested in creating computer security awareness.

### 6.9.2 Policies

Policies are applied across all platforms. However, defining them in the highest layer implies that well-defined and clear policies represent responsible behavior with regard to security throughout the layers. Policies themselves will not force people to follow the rules. However, they will set the boundaries that can be measured, and people can be made responsible for correct conduct according to these policies. Exact Synergy Enterprise can be used as a tool to inform all responsible people about the policies. For more strict control, a mechanism can be configured that will force people to accept these policies, placing responsibility directly on the users.

## 7. RELATED MATTERS

Apart from installing and setting up Exact Synergy Enterprise, there are several subjects related to the Exact Synergy Enterprise implementation. These are matters, such as updating Exact Synergy Enterprise, configuring **Microsoft Office Add-in**, integrating Exact Synergy Enterprise with back-office systems, and setting up the maintenance plan for daily database backup.

With the introduction of Windows Server 2008 R2, Exact has made efforts to ensure Exact Synergy Enterprise is compatible with this operating system. This is also covered in this chapter.

## 7.1 UPDATING EXACT SYNERGY ENTERPRISE

Exact continues to improve Exact Synergy Enterprise. As new versions of Exact Synergy Enterprise become available, customers and resellers can download and update their Exact Synergy Enterprise implementation. Exact Synergy Enterprise program files can be updated through the Internet. In cases where Internet access is not available at the location where

When Exact Synergy Enterprise is installed, such as for customers using Exact Synergy Enterprise in a LAN environment, an update CD-ROM can be created by downloading the files from another location with Internet access.

Updating Exact Synergy Enterprise can be divided into two major steps. In the first step, the Exact Synergy Enterprise program files in all application servers need to be updated. The second step, where the SQL database is updated, happens when Exact Synergy Enterprise is first accessed after the updating of program files.

### 7.1.1 Exact Synergy Enterprise program files update

In order to update Exact Synergy Enterprise over the Internet or create the update installer CD-ROM, the **Exact Internet Installer** is required. You can download this application from one of the following web sites:

- **Customers** — <https://customers.exact.com>
- **Resellers** — <https://partners.exact.com>
- **Employees** — <https://employees.exact.com>

### To update Exact Synergy Enterprise program files

The procedure to update Exact Synergy Enterprise is the same as the procedure to install Exact Synergy Enterprise from the Internet. See 3.1.2 *Installing Exact Synergy Enterprise from the Internet* for the procedure. The difference between updating and installing is that during the update, only the newer files are downloaded.

While performing the update as described at 3.1.2 *Installing Exact Synergy Enterprise from the Internet*, take particular interest in these points:

- Select the new release that you want to update to at the **Release** field.
- Check the folder at **Installation directory** to ensure that it is the installed folder of the current Exact Synergy Enterprise that you want to update.
- Select the appropriate update method at **Update software**.

## Selecting the appropriate update methods

The update method that you specify at **Update software** in the **Exact Internet Installer** is of particular concern. You can select to update each Exact Synergy Enterprise file that requires updating as each file is downloaded or after all required files are downloaded:

- **During download** — Each file that requires updating is updated as it is being downloaded from the update server. To accommodate this, the installer will stop the IIS web server during the whole download and update process. Once the update is completed, the installer will restart the IIS web server.
- **After download** — The files are updated only after all new files have been downloaded from the update server. The installer does not stop the web server during the download process. Once all new files have been downloaded, the installer will stop the web server to update the files. Once the update is completed, the installer restarts the IIS web server.

As the actual updating of files takes only a short time compared to downloading the files, it is recommended to select **After download** on a slow internet connection to minimize the service disruption. However, you should also consider the time to update the SQL database in your plan as Exact Synergy Enterprise will not be available during the database update.

## 7.1.2 Updating the Exact Synergy Enterprise database

After updating the Exact Synergy Enterprise program files, the SQL database may also need updating, if the database model is updated in the new release. In this case, when you access the updated Exact Synergy Enterprise for the first time, you will see the **Database: Update** page.

The Exact Synergy Enterprise implementation will not be available to the users before and during the database update. In the database update process, several SQL scripts may perform the following tasks:

- Make required changes to the database, such as adding extra columns to tables.
- Rebuild the Repository of Exact Synergy Enterprise.
- Add information to Exact Synergy Enterprise system tables, such as a new function right.

### To update the Exact Synergy Enterprise database:

1. Under the **Login** section, define the authentication method to log into the Microsoft SQL Server in order to create the database. If the current Microsoft Windows login has administrative rights on the database server and you want to use the **Windows Authentication** method, select the **Integrated security** check box. Otherwise, clear the check box and type the Microsoft SQL administrator login name and password at **Login name** and **Password** respectively.

## Database: Update

Update

### Database

Server (local)  
Database 001\_synergy

### Version

Product update 258  
Database batch number 411  
Data model date 411160818

### Login

Integrated security  EXACT-SOFTWARE\Gohj175745

Login name

Password

#### Note:

In order to update the database, only Microsoft SQL administrator rights are required and the user does not even have to be using Exact Synergy Enterprise. However, an Exact Synergy Enterprise administrator without administrative rights on the Microsoft SQL Server will not be able to update the database.

2. Click **Update** to update the database. You will not be able to cancel the process.

3. Wait while the database is updated. The **Status: Create** section will be displayed below the **Login** section to show you the update status. After the database has been updated, the Exact Synergy Enterprise environment will be loaded if you are a person with an **Active** status in Exact Synergy Enterprise.

### 7.1.3 Updating Exact Synergy Enterprise automatically

You can configure an automated task using the Microsoft Windows Scheduled Task or the Microsoft SQL Server Agent to automatically update Exact Synergy Enterprise periodically. This is possible as the **Exact Internet Installer** accepts command line parameters. There are two versions of the **Exact Internet Installer**.

The first one is the product-specific **Exact Internet Installer**. The executable file is named **ProductUpdater\_T15\_XX.exe** where **XX** is the language code (**AE** - American English / **DE** - German / **NL** - Dutch). If you are running the product updater from the command line using full silence option, the interface language does not matter.

#### Conventions:

Throughout this topic, the command syntax of each installer is explained using the following conventions:

- Parameters enclosed within square brackets ([ and ]) are optional.
- The chevrons (< and >) signifies that you need to replace the text (including the chevrons) with appropriate values.
- The command line parameters are case-sensitive.



The following table is a summary of the command syntax for **ProductUpdater\_T15\_XX.exe**. Take note that the parameter options are case-sensitive.

**ProductUpdater\_T15\_XX.exe**[/R:<release>][/IM:<n>][/W:<URL>][/USER:<login>]  
 [/PW:<password>][/DOMAIN:<domain>][/I:<folder>][/TTL:<title>][/CNT:<name>]  
 [/GDR:<gender>][/EML:<address>][/PH:<number>] [/S:<n>] [</RO>]

Command syntax	Description
/R:<release>	Specifies the <release> of the software to update to. In the interactive mode, this is the <b>Release</b> field.
/IM:<n>	Specifies installation mode where <n> is: <ul style="list-style-type: none"> <li>• <b>0</b> — Internet installation</li> <li>• <b>1</b> — Creation of CD installation</li> <li>• <b>2</b> — CD installation</li> </ul> If <b>/IM</b> is <b>2</b> , only the <b>/I</b> , <b>/S</b> , and <b>/RO</b> parameters are applicable. In the interactive mode, this is the <b>Install mode</b> field.
/W:<URL>	Specifies that the files are to be downloaded from this <URL>. Unless informed otherwise, this is “https://update.exactsoftware.com”. In the interactive mode, this is the <b>Web site</b> field.
/USER:<login>	Specifies the <login> name to the update server as provided by Exact. In the interactive mode, this is the <b>User</b> field.
/PW:<password>	Specifies the login <password> to the update server. In the interactive mode, this is the <b>Password</b> field.
/DOMAIN:<domain>	Specifies the login <domain>. For Exact customers and resellers, the domain is “EWEB”. In the interactive mode, this is the <b>Domain</b> field.
/I:<folder>	Specifies the <folder> to update or install Exact Synergy Enterprise. In the interactive mode, this is the <b>Installation directory</b> field.
/TTL:<title>	Specifies the contact salutation where <title> is: <b>Afd., Dhr., Dr., Fr., L.S., M.,Mevr., Mme., Mr., Mrs., Ms., Sr., Sra., or Srta.</b> In the interactive mode, this is the salutation selection of the <b>Name</b> field.
/CNT:<name>	Specifies the contact <name>. In the interactive mode, this is the <b>Name</b> field.
/GDR:<gender>	Specifies the contact gender where <gender> is: <b>Male</b> or <b>Female</b> .
/EML:<address>	Specifies the contact e-mail <address>.
/PH:<number>	Specifies the contact telephone <number>.
/S:<n>	Enables the silent mode where <n> is: <ul style="list-style-type: none"> <li>• <b>1</b> — Partial silence. No input needed but may ask for confirmation.</li> <li>• <b>2</b> — Full silence. No user interaction is required.</li> </ul>
/RO	Sets the option to perform only repair of current installation.

Apart from the simple **Exact Internet Installer**, you can also use the more advanced product updater, **SynergyProductUpdater.exe**. The interactive interface is available only in English. The **SynergyProductUpdater.exe** is more suitable for automatic updates in the silent mode where it supports extra functions, such as:

- Downloading Exact Synergy Enterprise online help files into your server.
- Selecting to download only online help files in a specified language.
- Updating files related to the legislation of only a specific country.
- Eight installation modes including network installation modes.

The following table is a summary of the command syntax for the advanced product updater. Take note that the parameter options are case-sensitive.

**SynergyProductUpdater.exe**[/P:<code>][/R:<release>][/IM:<n>][/NETDIR:<UNC>][/W:<URL>][/USER:<login>][/PW:<password>][/DOMAIN:<domain>][/I:<folder>][/LANGUAGE:<code>][/COUNTRY:<code>][/TTL:<title>][/CNT:<name>][/GDR:<gender>][/EML:<address>][/PH:<number>] [/S:<n>] [/DEMO][/HELP] [/RO]

Command syntax	Description
/P:<code>	Specifies the <code> of the product to download. For Exact Synergy Enterprise, the product code is "Synergy.NET".
/R:<release>	Specifies the <release> of the software to update to. In the interactive mode, this is the <b>Release</b> field.
/IM:<n>	Specifies installation mode where <n> is: <ul style="list-style-type: none"> <li>• <b>0</b> — Internet workstation installation</li> <li>• <b>1</b> — Internet network installation</li> <li>• <b>2</b> — Internet network installation update</li> <li>• <b>3</b> — LAN workstation installation</li> <li>• <b>4</b> — LAN workstation update</li> <li>• <b>5</b> — Creation of CD installation</li> <li>• <b>6</b> — CD workstation installation</li> <li>• <b>7</b> — CD network installation</li> </ul> <p>If <b>/IM</b> is <b>3</b> or <b>4</b>, only the <b>/P</b>, <b>/R</b>, <b>/NETDIR</b>, and <b>/I</b> parameters are applicable. If <b>/IM</b> is <b>6</b> or <b>7</b>, only the <b>/P</b>, <b>/I</b>, <b>/S</b>, and <b>/RO</b> parameters are applicable. In the interactive mode, this is the <b>Install mode</b> field.</p>
/NETDIR:<UNC>	Specifies the <UNC> (Uniform Naming Convention) network path from where the files will be downloaded when <b>/IM</b> is <b>3</b> or <b>4</b> . In the interactive mode, this is the <b>Path to network installation</b> field.
/W:<URL>	Specifies that the files are to be downloaded from this <URL>. Unless informed otherwise, this is "https://update.exactsoftware.com". In the interactive mode, this is the <b>Web site</b> field.
/USER:<login>	Specifies the <login> name to the update server as provided by Exact. In the interactive mode, this is the <b>User</b> field.
/PW:<password>	Specifies the login <password> to the update server. In the interactive mode, this is the <b>Password</b> field.
/DOMAIN:<domain>	Specifies the login <domain>. For Exact customers and resellers, the domain is "EWEB". In the interactive mode, this is the <b>Domain</b> field.
/I:<folder>	Specifies the <folder> to update or install Exact Synergy Enterprise. In the interactive mode, this is the <b>Installation directory</b> field.

Command syntax	Description
<code>/LANGUAGE:&lt;code&gt;</code>	<p>Specifies to download only help files of the specified language where &lt;code&gt; is:</p> <ul style="list-style-type: none"> <li>• <b>AR</b> — Arabic</li> <li>• <b>HR</b> — Croatian</li> <li>• <b>CS</b> — Czech</li> <li>• <b>DA</b> — Danish</li> <li>• <b>NL</b> — Dutch</li> <li>• <b>EN</b> — English</li> <li>• <b>ET</b> — Estonian</li> <li>• <b>FI</b> — Finnish</li> <li>• <b>FR</b> — French</li> <li>• <b>DE</b> — German</li> <li>• <b>EL</b> — Greek</li> <li>• <b>HU</b> — Hungarian</li> <li>• <b>ID</b> — Indonesian</li> <li>• <b>IT</b> — Italian</li> <li>• <b>JA</b> — Japanese</li> <li>• <b>KO</b> — Korean</li> <li>• <b>NO</b> — Norwegian</li> <li>• <b>PL</b> — Polish</li> <li>• <b>PT</b> — Portuguese</li> <li>• <b>RO</b> — Romanian</li> <li>• <b>RU</b> — Russian</li> <li>• <b>CH</b> — Simplified Chinese</li> <li>• <b>SK</b> — Slovak</li> <li>• <b>ES</b> — Spanish</li> <li>• <b>SV</b> — Swedish</li> <li>• <b>TH</b> — Thai</li> <li>• <b>ZH</b> — Traditional Chinese</li> <li>• <b>TR</b> — Turkish</li> <li>• <b>VI</b> — Vietnamese</li> </ul> <p>This is to be used together with <b>/HELP</b>. In the interactive mode, this is the <b>Language</b> field.</p>
<code>/COUNTRY:&lt;code&gt;</code>	<p>Specifies the demo company database to download where &lt;code&gt; is:</p> <ul style="list-style-type: none"> <li>• <b>BE</b> — Belgium</li> <li>• <b>DE</b> — Germany</li> <li>• <b>NL</b> — The Netherlands</li> <li>• <b>LU</b> — Luxembourg</li> </ul> <p>This is to be used together with <b>/DEMO</b>. In the interactive mode, this is the <b>Country</b> field.</p>
<code>/TTL:&lt;title&gt;</code>	<p>Specifies the contact salutation where &lt;title&gt; is: <b>Afd., Dhr., Dr., Fr., L.S., M., Mevr., Mme., Mr., Mrs., Ms., Sr., Sra., or Srta.</b> In the interactive mode, this is the salutation selection of the <b>Name</b> field.</p>
<code>/CNT:&lt;name&gt;</code>	<p>Specifies the contact &lt;name&gt;. In the interactive mode, this is the <b>Name</b> field.</p>
<code>/GDR:&lt;gender&gt;</code>	<p>Specifies the contact gender where &lt;gender&gt; is: <b>Male</b> or <b>Female</b>.</p>
<code>/EML:&lt;address&gt;</code>	<p>Specifies the contact e-mail &lt;address&gt;.</p>

Command syntax	Description
/PH:<number>	Specifies the contact telephone <number>.
/S:<n>	Enables the silent mode where <n> is: <ul style="list-style-type: none"> <li>• <b>1</b> — Partial silence. No input needed but confirmation may be asked.</li> <li>• <b>2</b> — Full silence. No user interaction is required.</li> </ul>
/DEMO	Sets the option to download a sample company database for demonstration.
/HELP	Sets the option to download online help files into your server.
/RO	Sets the option to perform only repair of current installation.
/FU	Sets the option to uninstall the previous version first before installing the updated version.

**Note:**

If a parameter has not been specified, the previous values as set in the command line or interactive mode of the installer are used except for the password value. You will need to specify the password in the command line if you want to use the full silence option.

**Caution:**

The password is specified in plain text in the command line. Take necessary precautions to avoid security issues.

## 7.2 INSTALLING EXACT SYNERGY ENTERPRISE USING MSI

In order to get the latest MSI and MSP packages, do the following:

1. Log in at the Exact customer portal and click on the link for downloads (this is typically at <https://customers.exact.com/docs/sysmsiupdater.aspx>) to open the **Download options** page.

2. Select the relevant product line at **Product line** and the corresponding release number at **Release**.
3. At **FTP server**, select the server from which you want to download.
4. Select the relevant installation at **Install mode**.
5. At **Platform**, select the appropriate platform version that you want to download.
6. Click **Download** to start downloading the file.
7. Click **Run** to start the installation immediately or **Save** to save the file to your computer for installation at a later time.

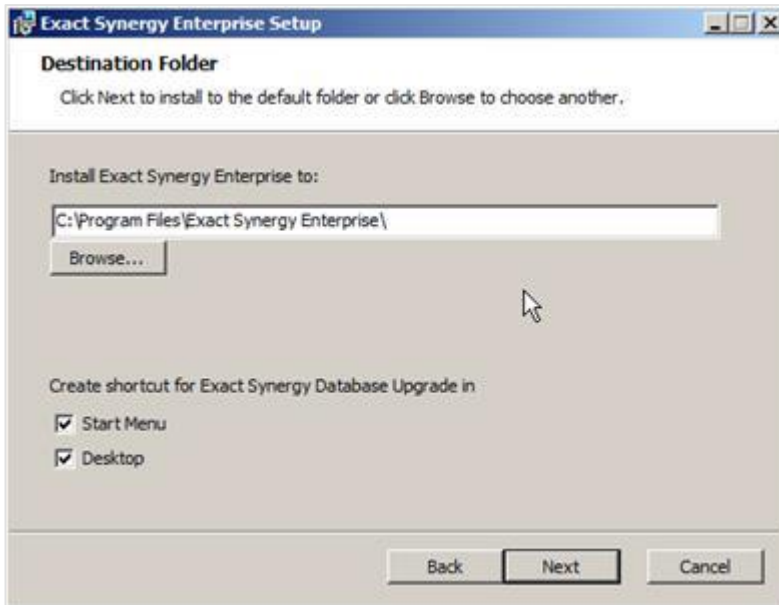
### To install Exact Synergy Enterprise:

1. Go to the **Start** menu, click **Windows Explorer** and browse the folder where you saved the downloaded Exact Synergy Enterprise Installer.
2. Double-click the Exact Synergy Enterprise installer (the .msi file).
3. Select the installation language and click **OK** to proceed.



4. On the **Welcome** page, click **Next** to continue.

5. On the **End-User License Agreement** page, select the I accept the terms in the License Agreement check box, and then click **Next**.
6. Select the location where you want Exact Synergy Enterprise to be installed. For example, “C:\Program Files\Exact Synergy Enterprise” and click **Next** to proceed. The default path for installation is “C:\Program Files\Exact Synergy Enterprise”.



7. Click **Install** to start the installation process.



8. Once completed, click **Finish** to start Exact Synergy Enterprise.

**To restore the Exact Synergy Enterprise database to a Windows Server 2008 R2 machine:**

To restore the Exact Synergy Enterprise database, see 3.2.3 *Opening an existing Exact Synergy Enterprise database*.

## 7.3 SYNERGY OFFICE INTEGRATION

**Synergy Office Integration** allows for closer integration between Exact Synergy Enterprise and Microsoft Office. With **Synergy Office Integration**, you will be able to access Exact Synergy Enterprise and all its related functions using Microsoft Outlook.

In addition, you will be able to perform functions, such as saving and viewing documents, saving presentations, and spreadsheets directly and easily to Exact Synergy Enterprise.

**Note:**

You may not need to install **Office Add-in** if **Synergy Office Integration** has already been installed. **Synergy Office Integration** offers more advanced features which are not available in **Office Add-in**.

### Requirements and prerequisites

The following requirements must be met before **Synergy Office Integration** can be installed:

- Verify the validity of the version of **Synergy Office Integration** via Modules → System → Setup → Settings – General → Preferences. The **Office Integration version** field is displayed under the **General** section if you have selected the **Corporate (Office Integration)** tab. Otherwise, update Exact Synergy Enterprise.
- Enable the **Binary**, **DocumentManagement**, **DocumentType**, and **Profile** web services at Modules → System → Setup → Web services → Settings.
- Microsoft .NET Framework version 4.7.
- Microsoft Visual Studio Tools for the Microsoft Office system (version 3.0 Runtime) (x86) or Microsoft Visual Studio Tools for the Microsoft Office system (version 4.0 Runtime) 32-bit or 64-bit.
- Windows Installer 3.1 or higher.
- Windows 7 (32-bit or 64-bit).
- Microsoft Office 2019 (32-bit).

**Note:**

To download Microsoft .NET Framework version 4.7, Microsoft Visual Studio Tools for Microsoft Office system (version 3.0 Runtime) (x86), and Microsoft Visual Studio Tools for Microsoft Office system (version 4.0 Runtime) 32-bit or 64-bit, see the *Exact Synergy Office Integration (Doc ID 18.826.648)* or see *Installing Synergy Office Integration (Doc ID 18.987.215)* in Exact Synergy Enterprise.

### 7.3.1 Installing Synergy Office Integration

#### To install Synergy Office Integration:

1. Go to Modules → System → Setup → Settings – General → Preferences.
2. Under the **General** tab, under the **Office: Installations** section, select **Synergy Office Integration**.
3. On the **System: Installation** page, select **Download**. The following message will be displayed:



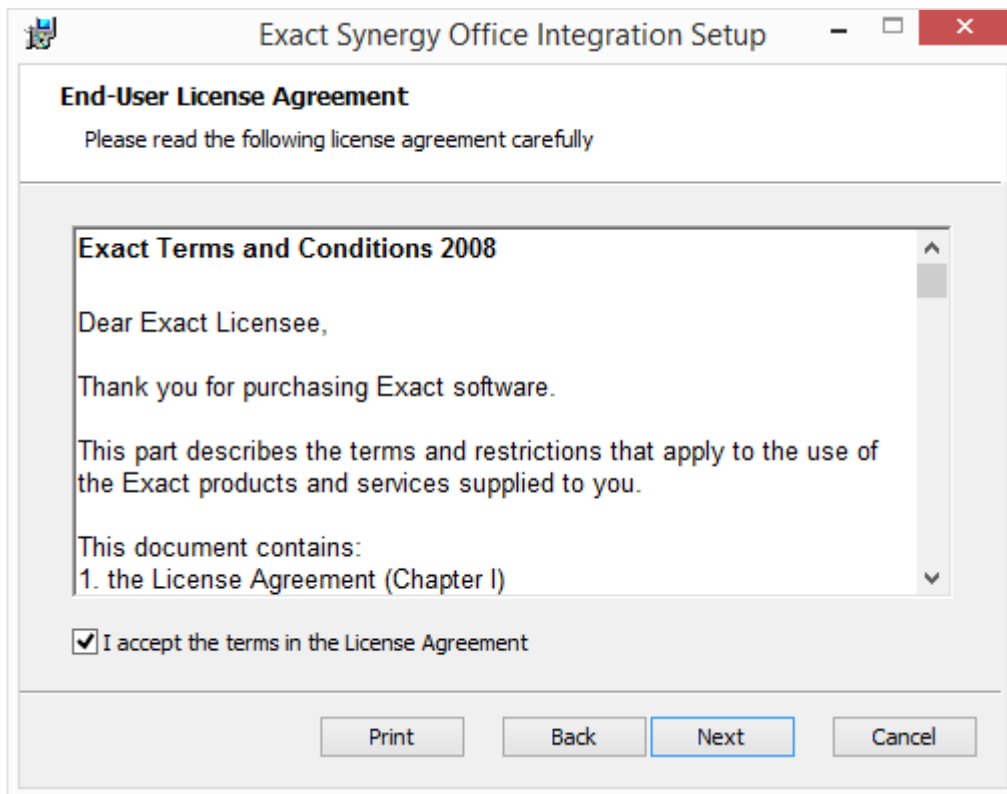
4. Click Save and specify a location at which to save the file.
5. Locate the file that you have saved and double-click the file. The following message will be displayed:



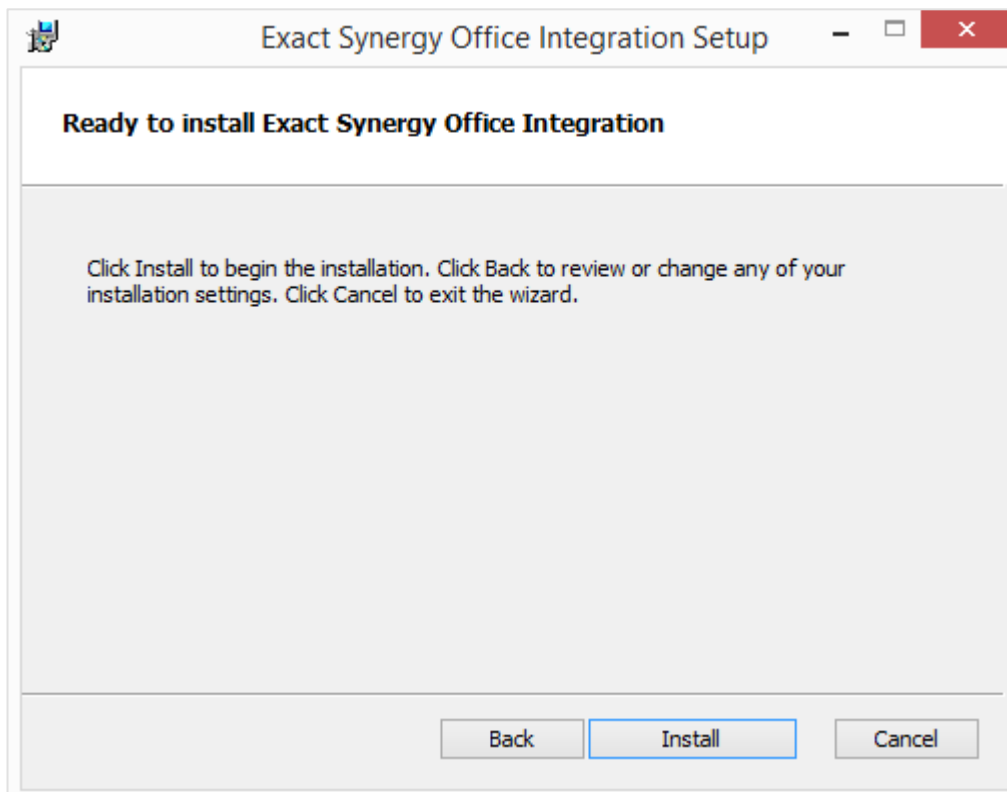
6. Click **Next**.



- The following message will be displayed. To accept the terms on the **End-User License Agreement** page, select the **I accept the terms in the License Agreement** check box and click **Next**.



- The following message will be displayed. Click **Install** to proceed.



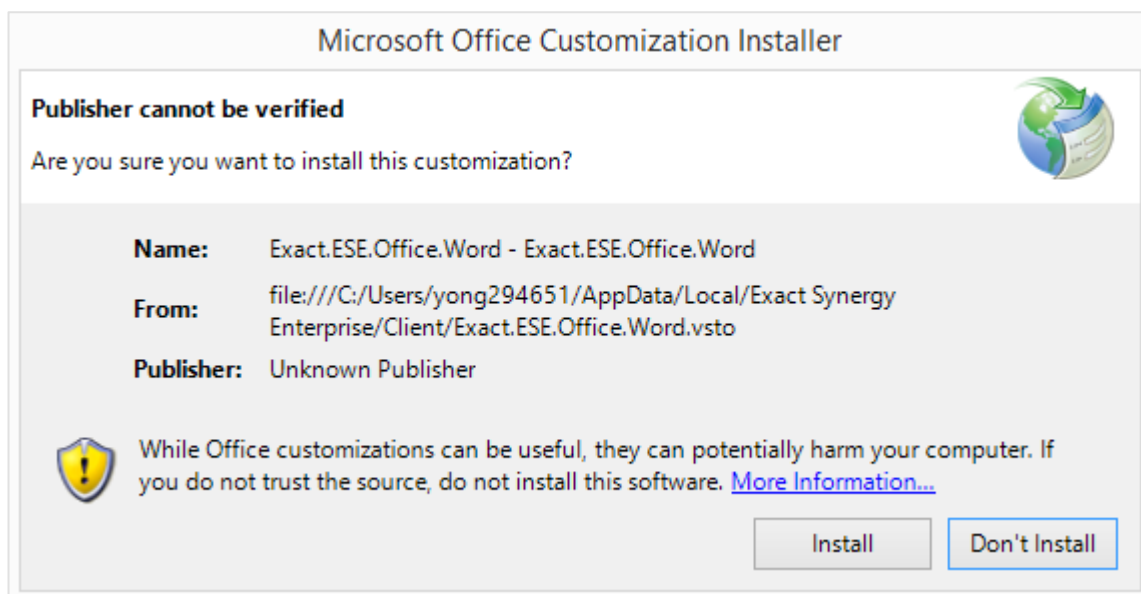
9. Once the installation is completed, click **Finish**.

### 7.3.2 Using Synergy Office Integration for the first time

Before you use Synergy Office Integration for the first time, it has to be configured correctly. This is to ensure that no problems are encountered when you save documents or e-mails to Exact Synergy Enterprise. The default document types need to be determined for the different usage within the different applications. To do this, go to Modules → System → Setup → Settings – General → Preferences, click the **Corporate (Office Integration)** or **Office Integration** tab, and then define the fields.

You can access the **Corporate (Office Integration)** tab only if you are an administrator. One point to note when selecting document types for the fields is to ensure that the selected document type is accessible by all target users. This is because some document types have higher security levels than others and are, thus, not accessible to some users.

When starting each of the Microsoft Office applications for the first time after **Synergy Office Integration** has been installed, you will see the following:



Click **Install** to proceed. After the installation, if there is an updated version of **Synergy Office Integration** available, you will be informed and asked whether you want to upgrade to the latest version.

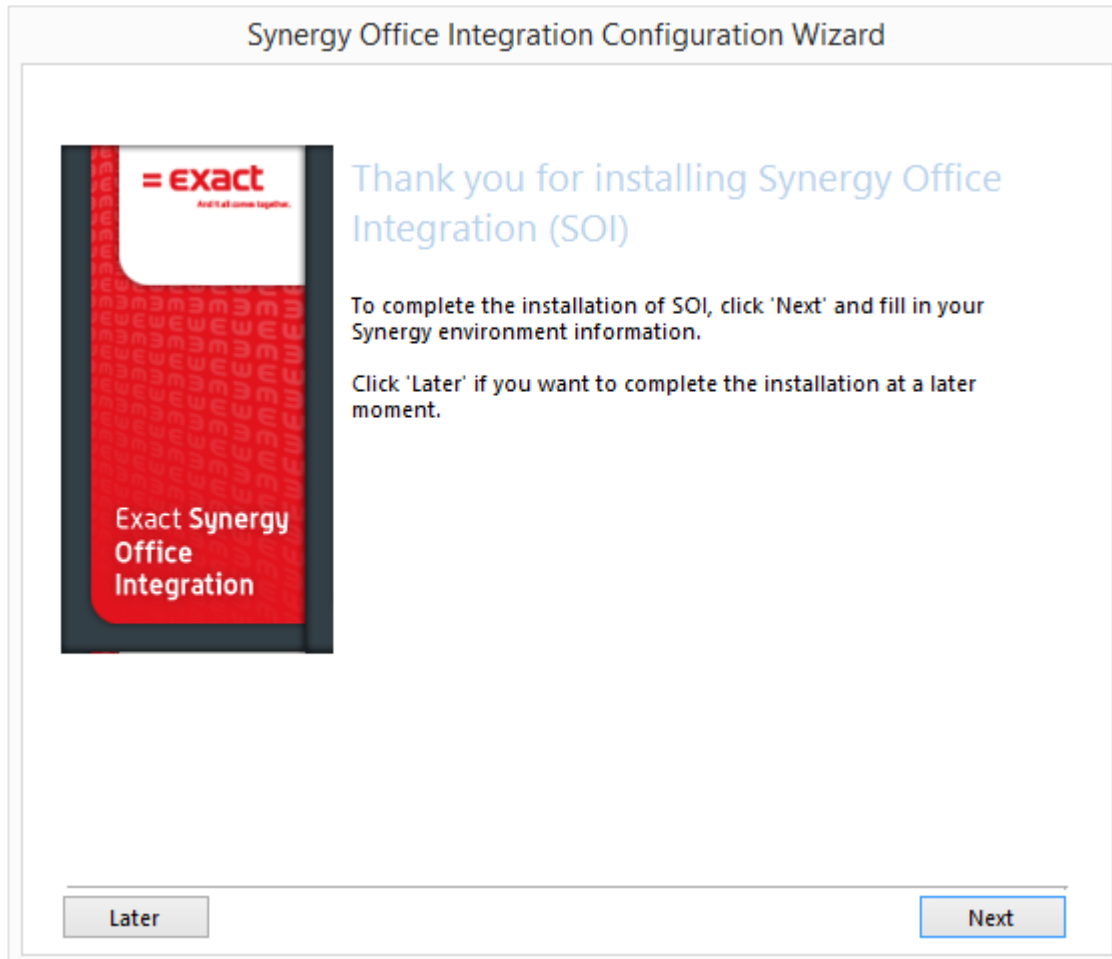
Next, a page will be displayed for you to begin the configuration wizard. You can choose to perform the configuration at a later stage. However, to use the **Synergy Office Integration** features, you must first complete the configuration wizard.

**Caution:**

Your Exact Synergy Enterprise portal must be added to the “Trusted sites” zone in Microsoft Edge to allow **Synergy Office Integration** to function properly.

**To set up Synergy Office Integration using configuration wizard:**

1. Open Microsoft Word, Microsoft Excel, Microsoft Outlook, or Microsoft Power Point. If you are opening the Microsoft application for the first time after installing **Synergy Office Integration**, you will see the following page:



2. Click **Next** to begin the configuration.

**Note:**

If you click **Later**, the configuration will be started when you use any of the **Synergy Office Integration** feature.

**Synergy Office Integration Configuration Wizard**

Fill in the information to connect to your Synergy environment

Web address

Example:

Authentication Mode:

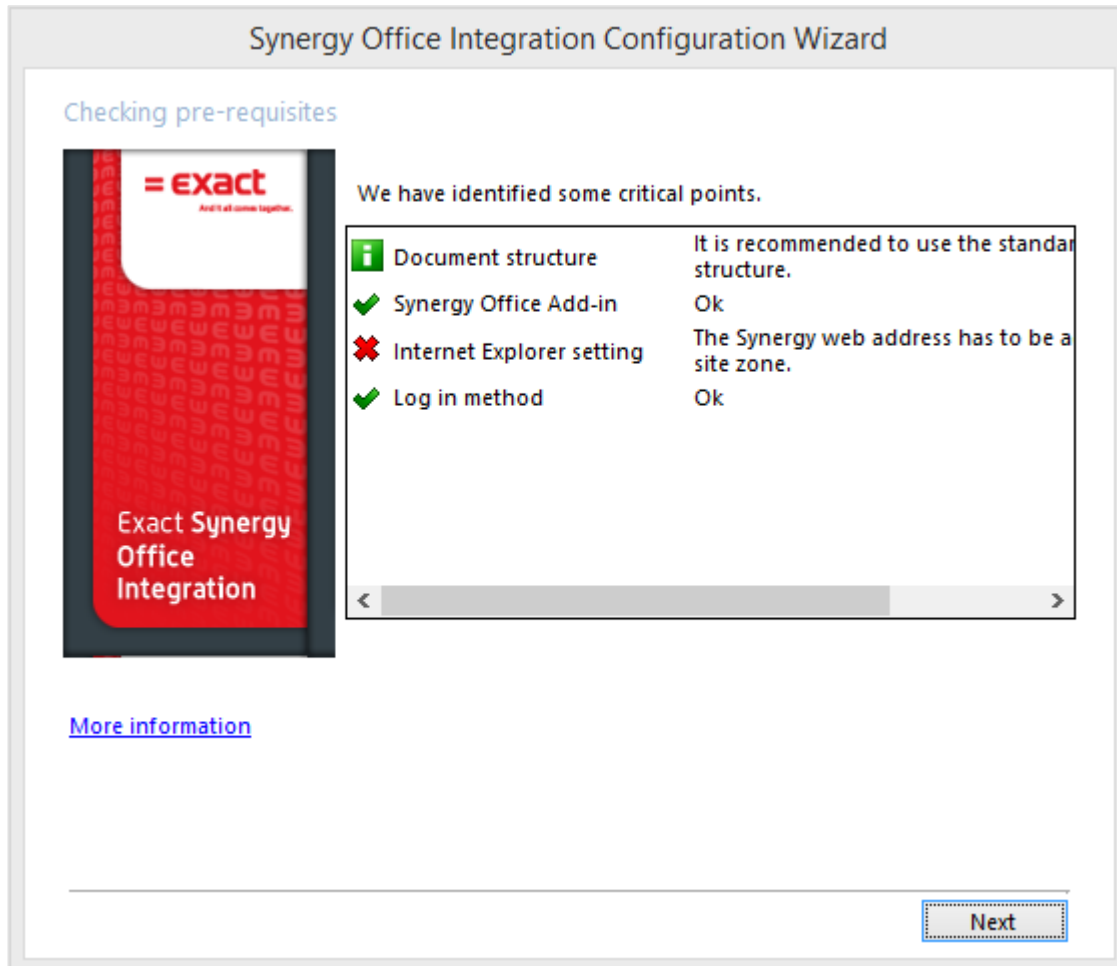
Username

Password

Remember me

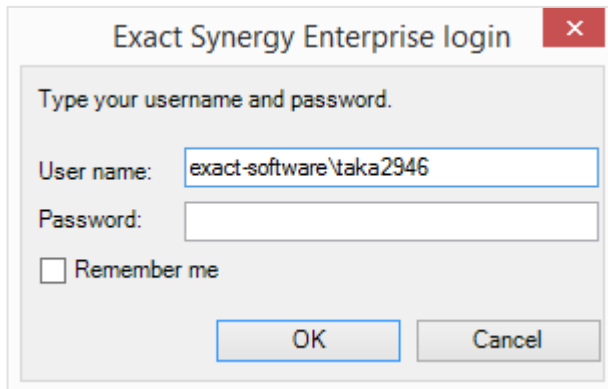
3. At **Web address**, fill in the web site URL of the Exact Synergy Enterprise software that you want to connect to.
4. At Authentication Mode, select one of the following token-based authentication models: Windows Authentication, Basic Authentication, WAAD Authentication, or Auth0 Authentication.

5. At **Username** and **Password**, fill in your Exact Synergy Enterprise login details, and then click **Next**. The system will then check if your system fulfills all prerequisites needed for the configuration. Two possibilities can occur:
- If the system fulfills all prerequisites, click **Next** to proceed with the configuration. Once it is completed, click **Finish** to exit the configuration wizard, and then restart your MS Office applications for the settings to take effect.
  - If the system does not fulfill one prerequisite or more, you will see the following page:

**Note:**

If the configuration fails to proceed, contact your system administrator to resolve the critical points. You can also click the **More information** hyperlink in the configuration wizard to obtain more information on the critical points.

Every time you start a Microsoft Office application, the **Synergy** ribbon or toolbar is available for you. However, when you access any features under the **Synergy** ribbon or toolbar for the first time, a login page will be displayed for you to type your user name and password, as displayed in the following:

**Note:**

Should the corporate default web site be changed while a user is logged in to **Synergy Office Integration**, the user will be prompted again to re-login to the new web site.

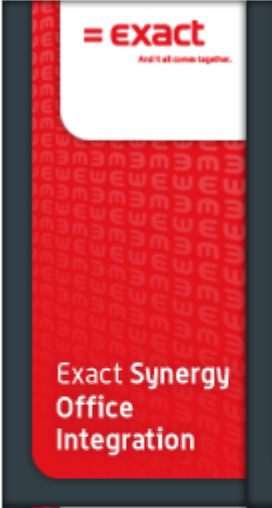
As of product update 261, the WAAD authentication and Auth0 authentication no longer requires for the user name and password to be defined in the SOI configuration wizard screen. See the following configuration steps for the WAAD authentication and Auth0 authentication:

WAAD authentication


6. In the following screen, select **WAAD Authentication** at the **Authentication Mode** field.

Synergy Office Integration Configuration Wizard

Fill in the information to connect to your Synergy environment



Web address

Example:  
  
<https://deltabike.exact.com/docs/Portal.aspx>

Authentication Mode:

Authority

ClientID

App ID URI

7. Define the **Authority**, **ClientID**, and **APP ID URI** fields.
8. Click **Next**.



9. The following multi-factor authentication login screen will be displayed:

Sign in to your account

Microsoft

ngso30315@ngsoohoeexact.onmicrosoft....

### Enter code

Please type in the code displayed on your authenticator app from your device

Code

Verify

Having trouble? [Sign in another way](#)

©2018 Microsoft Terms of use Privacy & cookies ...

10. Type the authentication code.

11. Click **Verify**.

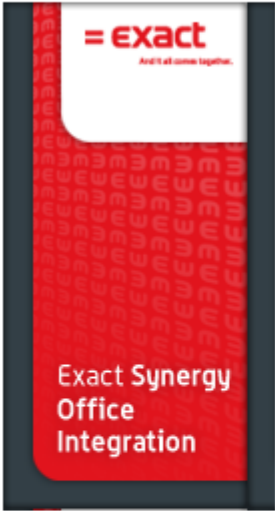
12. The standard screens will be displayed and you can proceed with the configuration accordingly.

## Auth0 authentication


1. In the following screen, select **Auth0 Authentication** at the **Authentication Mode** field.

Synergy Office Integration Configuration Wizard

Fill in the information to connect to your Synergy environment



Web address

Example:  
 <https://deltabike.exact.com/doc/Portal.aspx>

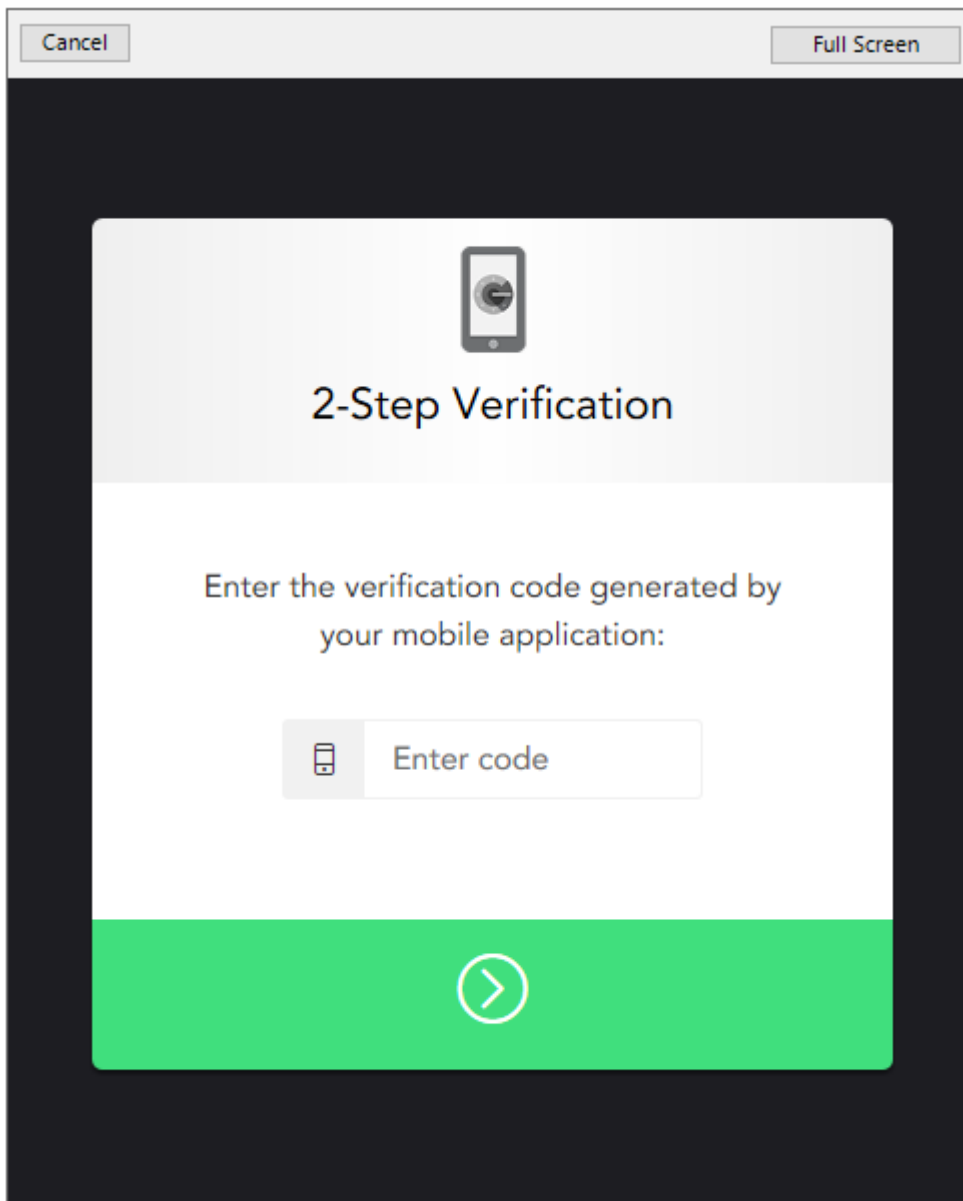
Authentication Mode:


Authority

ClientID

2. Define the **Authority** and **ClientID** fields.
3. Click **Next**.

4. The following multi-factor authentication login screen will be displayed:



5. Type the authentication code.
6. Click . The standard screens will be displayed and you can proceed with the configuration accordingly.

## 7.4 MICROSOFT OFFICE ADD-IN

**Microsoft Office Add-in** integrates Microsoft Office with Exact Synergy Enterprise through an interface that can directly communicate with Exact Synergy Enterprise. The following describes the applications that support **Office Add-in**:

- **Office Add-in** for Microsoft Word allows documents to be uploaded to Exact Synergy Enterprise, and documents created in Exact Synergy Enterprise can be opened in Microsoft Word. Furthermore, documents can be uploaded in batches from Microsoft Word to Exact Synergy Enterprise and mail merges can be performed in Microsoft Word with the data obtained from **Customers** in Exact Synergy Enterprise.
- **Office Add-in** for Microsoft Excel can be used to create **Customers** reports from Exact Synergy Enterprise and **Customers** contacts can be uploaded to Exact Synergy Enterprise.
- **Office Add-in** for Microsoft Outlook can be used to store incoming and outgoing e-mails as documents in Exact Synergy Enterprise.
- **Office Add-in** for Microsoft PowerPoint can be used to upload and download PowerPoint presentations to Exact Synergy Enterprise.

**Note:**

It is advisable to install **Synergy Office Integration** over **Office Add-in** to fully optimize Exact Synergy Enterprise functionalities.

### 7.4.1 Before installing Microsoft Office Add-in

The following summarizes the **Office Add-in** requirements:

- Users must have the **Administrator** role on the local PC.
- Update to the latest Microsoft Data Access Components (MDAC).
- MSXML 3.0 and MSXML 4.0 components are installed.
- Exact Synergy Enterprise web site is added to the Microsoft Internet Edge trusted sites list.

**Note:**

- **Office Add-in** uses XML to upload documents to the server. The MSXML 4.0 components are required only for the application server while the minimum requirement for client computers is MSXML 3.0.
- For the latest system requirements for **Synergy Office Integration** and **Office Add-in**, see *System Requirements - Synergy Office Integration and Office Add-in (Doc ID: 20.963.409)* in Exact Synergy Enterprise.

### Registering the MSXML components

**Microsoft Office Add-in** depends on Microsoft XML components. These components are installed and registered in the system once users install **Office Add-in** to their client workstation. However, if the **MSXML** components are no longer registered in the system somehow, you will have to manually register the components again in order to continue using **Office Add-in**. For example, if MSXML 3.0 is not installed, you will not be able to select main categories, categories, and subcategories when saving a document.

**To register MSXML components:**

1. Go to the **Start** menu and click **Run**. Type **cmd.exe** at **Open** and click **OK** to start the command prompt.
2. At the command prompt, type the following command:  

```
for %1 in (%systemroot%\system32\msxml*.*) do @regsvr32.exe %1 /s
```
3. Press the ENTER key to register the **MSXML** components.

**Note:**

To execute this command, you must have local administrator rights for the workstation.

4. Type **exit** and press ENTER to close the command prompt.

## 7.4.2 Installing Microsoft Office Add-in

**Office Add-in** has to be installed in Exact Synergy Enterprise before the feature is available in Microsoft Word, Microsoft Excel, Microsoft Outlook, and Microsoft PowerPoint.

**Caution:**

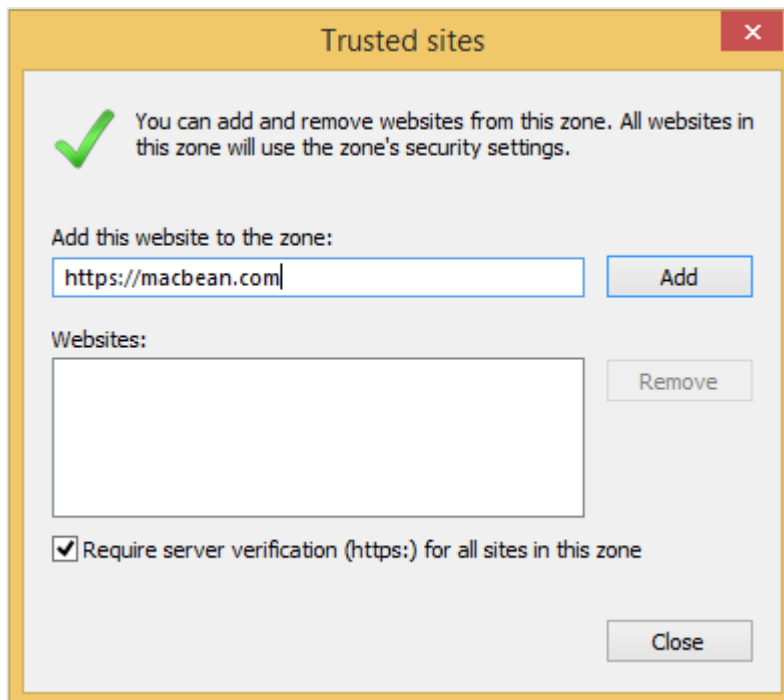
Make sure that all Microsoft Office applications are closed before installing **Office Add-in**.

### Changing security settings in Microsoft Internet Edge

You may need to change some security settings in Microsoft Internet Edge in order to install the **Office Add-in** successfully.

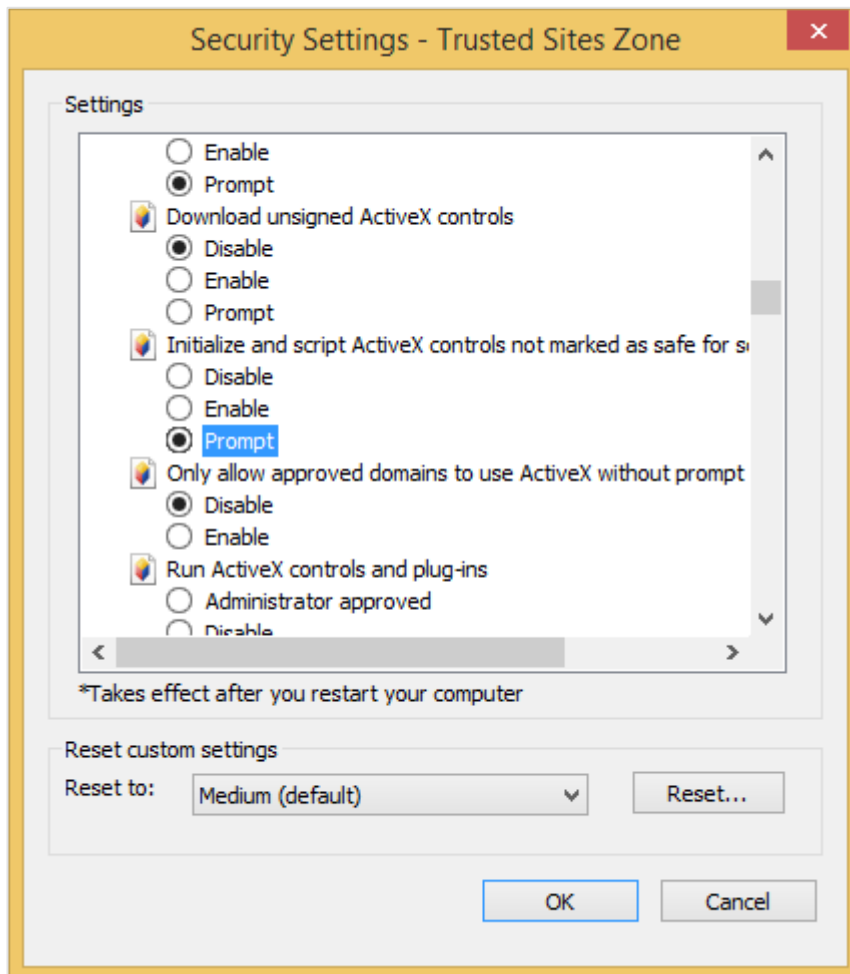
**To change security settings in Internet Edge:**

1. In Microsoft Edge, click **Tools** and select **Internet options**.
2. Click the **Security** tab and select **Trusted sites** under the **Select a zone to view or change security settings** section.
3. With **Trusted sites** selected, click **Sites**.



4. Type the URL of your Exact Synergy Enterprise portal, click **Add**, and then click **Close**.

- With **Trusted sites** still selected, click **Custom level** under the **Security level for this zone** section.



- Select **Prompt** in **Initialize and script ActiveX controls not marked as safe for scripting** under the **Settings** section.
- Click **OK** to save the settings.

**Caution:**

Your Exact Synergy Enterprise portal must be added to the “Trusted sites” zone in Microsoft Edge to allow **Office Add-in** to function properly.

### Installing Microsoft Office Add-in using the online installer

The easiest way to install Microsoft Office Add-in is by using the online installer in Exact Synergy Enterprise.

**To install Microsoft Office Add-in:**

1. Go to Modules → System → Setup → Other → Installation: Microsoft office Add in. You will see the following page:



2. Under the **Office Add-In** section, click **Install**. If you see a warning page by Microsoft Edge, click **Install**.
3. After a successful installation, click **Close** to exit.

**Manually installing Microsoft Office Add-in**

If you have problems installing the **Office Add-in** from Exact Synergy Enterprise, you can install it manually. Remember to close all Microsoft Office applications before installing **Office Add-in**.

**To install Microsoft Office Add-in manually:**

1. Get the **SynergyOfficeAddin.CAB** file from an administrator with access to the folder where Exact Synergy Enterprise installed on the application server. This file can be found in the cab subfolder.
2. Create a folder in the C: drive and name it **Office Add-in synergy**.
3. Put the **SynergyOfficeAddin.CAB** file in the Office Add-in synergy folder.
4. Go to the **Start** menu, and click **Run**. Type **cmd.exe** in the **Open** box and click **OK** to start the command prompt.
5. At the command prompt, type the following command:
 

```
extrac32 /e /1"c:\Office Add-in synergy" "c:\Office Add-in synergy\SynergyOfficeAddin.CAB"
```
6. Press ENTER to extract the content of **SynergyOfficeAddin.CAB** into the **Office Add-in synergy** folder.
7. Once the extraction is completed, type the following command at the command prompt:
 

```
regsvr32 c:\ "Office Add-in synergy"\SynergyOfficeAddin.dll
```
8. Press ENTER to install and register **Office Add-in** into the system, and then click **OK**.
9. At the command prompt, type **exit** and press ENTER to close the command prompt.



### 7.4.3 Setting up Office Add-in in Microsoft Office

Once **Office Add-in** is installed, some settings must be defined in Microsoft Office. For example, you need to define the Exact Synergy Enterprise portal so that documents can be uploaded to and downloaded from Exact Synergy Enterprise. The settings for Microsoft Office and Microsoft Excel are the same.

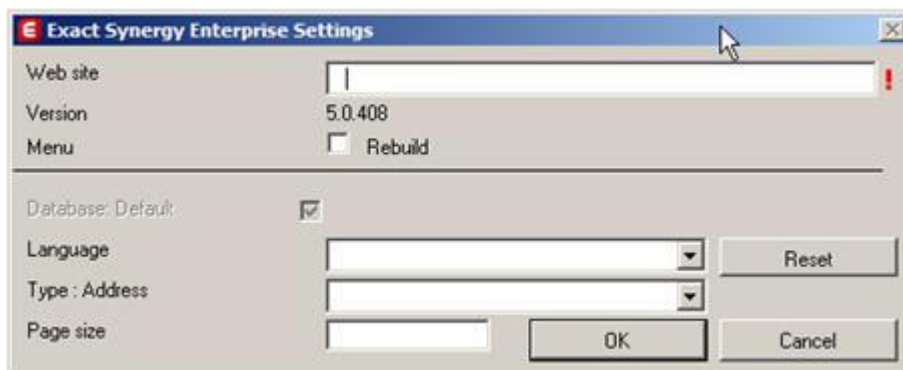
#### To set up Office Add-in in Microsoft Word and Microsoft Excel:

1. Open Microsoft Word or Microsoft Excel.

**Note:**

Make sure that at least a blank document or spreadsheet is opened in the application before proceeding.

2. Click the **Add-Ins** tab in the ribbon. Then, click **Exact Synergy** and select **Settings**.



3. Type the Exact Synergy Enterprise portal address at **Web site**.
4. Select the **Rebuild** check box if you want to rebuild the **Office Add-in** menu whenever the web site is updated.
5. Select the **Database: Default** check box if you want **Office Add-in** to access the default portal database. Clear the check box if you want to define a different database.

**Note:**

If you define a different database, take note that the database name setting is case-sensitive.

6. At **Language**, select a language to use for the **Office Add-in** menu. This does not affect the contents of the documents that are uploaded to or opened from Exact Synergy Enterprise.
7. At **Type: Address**, select the address type to extract from the Exact Synergy Enterprise **Customers** data to use in the Microsoft Word mail merge function. A customer account in Exact Synergy Enterprise can have different address types, such as **Visit**, **Invoice**, **Postal**, and **Delivery**.
8. Type the size of data to download per data package (XML page) at **Page size**. This determines the amount of data that is transferred in each package between Exact Synergy Enterprise and **Office Add-in**.

**Tip:**

A smaller number means a more responsive **Office Add-in** but longer download time. For example, if you decide to cancel a document download from Exact Synergy Enterprise, a smaller number means that **Office Add-in** can cancel the download faster.

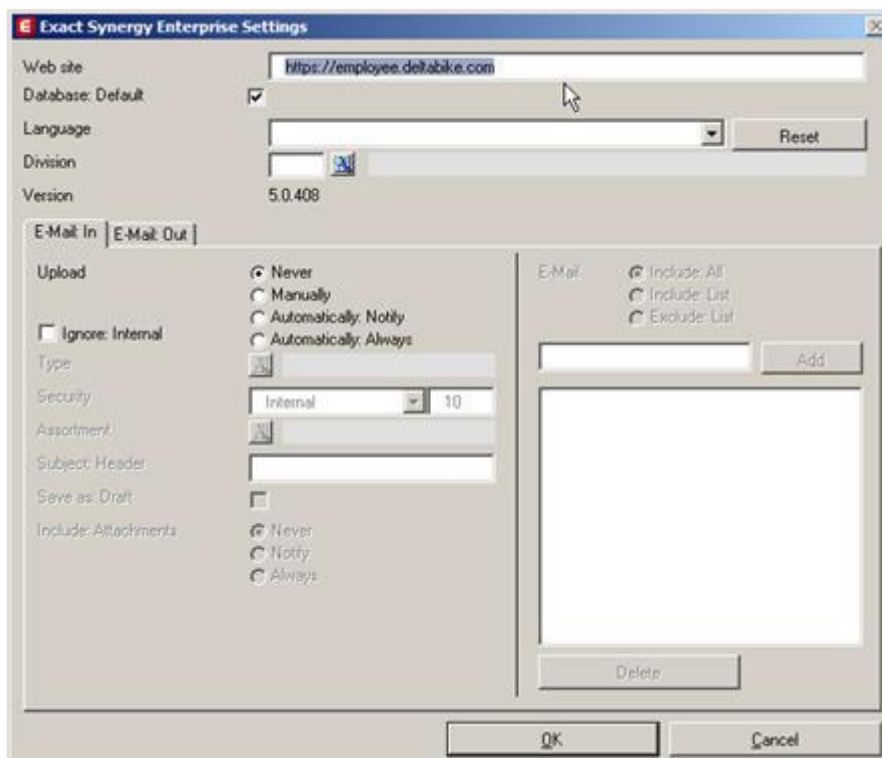
9. Click **OK** to save.

**Note:**

All fields with the “!” icon are mandatory.

**To set up Microsoft Office Add-in for Microsoft Outlook:**

1. Open Microsoft Outlook. Then, click **Exact Synergy** under **Add-Ins** in the menu and select **Settings**.



2. Type the Exact Synergy Enterprise portal address at **Web site**.
3. Select the **Database: Default** check box if you want **Office Add-in** to access the default portal database. Clear the check box if you want to define a different database.
4. At **Language**, select a language for the Exact Synergy Enterprise interface. This does not affect the contents of the e-mails that are uploaded to or opened from Exact Synergy Enterprise.
5. Type or select your division specified in Exact Synergy Enterprise at **Division**.
6. Click the **E-mail: In** or **E-Mail: Out** tab to set up incoming or outgoing e-mails.

7. At **Upload** in either tab, select the one of the following options:
  - **Never** — Select this option to disable uploading or downloading of e-mails into Microsoft Outlook from Exact Synergy Enterprise.
  - **Manually** — Select this option to manually upload or download e-mails with Exact Synergy Enterprise using the **Save** command under the **Office Add-in** menu.
  - **Automatically: Notify** — Select this option to display a notification message asking whether you want to upload the e-mail to Exact Synergy Enterprise whenever there is a new e-mail.
  - **Automatically: Always** — Select this option to automatically upload or download all e-mails with Exact Synergy Enterprise without notification.
8. Select the **Ignore: Internal** check box to exclude internal company e-mails from the upload or download.
9. At **Type**, select a document type to upload the e-mails as this type of document. This is optional.
10. Select a document main category, category, and subcategory at **Main category**, **Category**, and **Subcategory** respectively to save e-mails into the respective categories.
11. Type or select the security level for the uploaded e-mails at **Security**.
12. At **Assortment**, select the document assortment of the uploaded e-mails.
13. Type a subject prefix at **Subject: Header**. When an e-mail is uploaded, this will be prefixed to the e-mail subject to become the document title.
14. Select the **Save as: Draft** check box to save all uploaded e-mails as documents in draft status. Clear the check box to upload e-mails as documents in normal status.

**Tip:**

Documents in draft status can be read or modified only by the document creator or owner.

15. At **Include: Attachments**, select one of the following options:
  - **Never** — Select this option if you do not want to upload e-mail attachments.
  - **Notify** — Select this option if you want the system to ask you whether you want e-mail attachments to be uploaded.
  - **Always** — Select this option to upload attachments in all e-mails without notification.

**Note:**

If an e-mail has more than one attachment, Exact Synergy Enterprise will store one attachment in the document and the other attachments in reply documents.

16. At **E-Mail**, select one of the following options:
  - **Include: All** — Select this option to upload all received e-mails to Exact Synergy Enterprise.
  - **Include: List** — Select this option to upload only e-mails from the listed addresses to Exact Synergy Enterprise.
  - **Exclude: List** — Select this option to upload all e-mails to Exact Synergy Enterprise except those from the listed addresses.
17. Type an e-mail address in the box next to the **Add** button and click **Add** to include the e-mail address in the list. You can repeat this step to add more addresses.

**Tip:**

To remove an e-mail address from the list, select the address and click **Delete**.

18. Click **OK** to save your settings.

**Note:**

All fields with the “!” icon are mandatory.

## 7.5 INTEGRATION WITH EXACT BACK-OFFICE PRODUCTS

Although the installation of Exact Synergy Enterprise is fairly simple, the Exact Synergy Enterprise environment can be rather complex.

Integrating Exact Synergy Enterprise with Exact Globe Next can lead to confusion especially with regard to:

- storage of the Microsoft Windows user accounts for the different types of users (resellers, customers, and employees),
- addressing more databases with one program environment, or ASP model; and
- other technical aspects of Exact Synergy Enterprise setup.

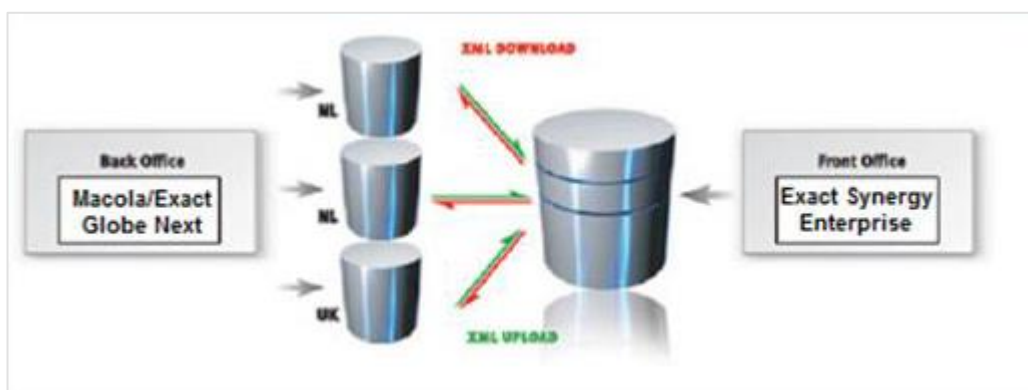
### 7.5.1 Consolidating Exact Synergy Enterprise and Exact Globe Next

Integration of operations can lead to a more efficient, cost effective, and high service level environment for customers. The combination of Exact Synergy Enterprise and Exact Globe Next can run together in a multi-database setup known as the “consolidated scenario”.

In this scenario, there are multiple back-office administrations. At the same time, multiple different databases are maintained: one for Exact Synergy Enterprise and one for every Exact Globe Next administration. The databases interact with each other using XML. The tool for this, **Asimport.exe**, is provided with Exact Globe Next.

These back-offices can be located anywhere and may be of any type, as long as the application can handle **Exact XML-Scheme**. However, the preferred application is Exact Globe Next because of the similar database structure.

Data entered or modified in Exact Synergy Enterprise is downloaded to the appropriate Exact Globe Next back-offices and vice versa. By executing this upload and download frequently, the data in both administrations will be up to date.



In this scenario, the integration is not limited to one company as a back-office administration can be added at any time. Instead of doing a financial consolidation with various outdated spreadsheets, this scenario allows you to do an automatic financial consolidation in Exact Synergy Enterprise, based on live data coming from the back-office administrations.

**Tip:**

This scenario can be used for a new installation of Exact Synergy Enterprise and Exact Globe Next or when linking Exact Synergy Enterprise to an existing Exact Globe Next database.

**To consolidate Exact Synergy Enterprise and Exact Globe Next:**

Start by entering master data into the Exact Synergy Enterprise database. Then, use **Asimport.exe** to distribute the data to the Exact Globe Next databases. This keeps the numbering and coding of relations between the applications and databases as synchronized as possible.

Keep these in mind to successfully use **Asimport.exe**:

- Exact Synergy Enterprise and Exact Globe Next must be of the same batch.
- The user running **Asimport.exe** must exist as a person with appropriate rights in both databases.
- The user running the application must log into Exact Synergy Enterprise on the server where the job is to be executed.
- The Exact Globe Next administration code must match the division code in Exact Synergy Enterprise.
- The Exact Globe Next license must contain the needed XML server options.
- For each Exact Globe Next administration, enter or schedule a separate command.

## 7.6 PREPARING MICROSOFT WINDOWS SERVER 2008 R2

Once the Microsoft Windows Server 2008 R2 operating system is installed, it must be set up accordingly to install and run Exact Synergy Enterprise. The server should already be connected to the network, properly named, and if necessary, added to the appropriate domains.

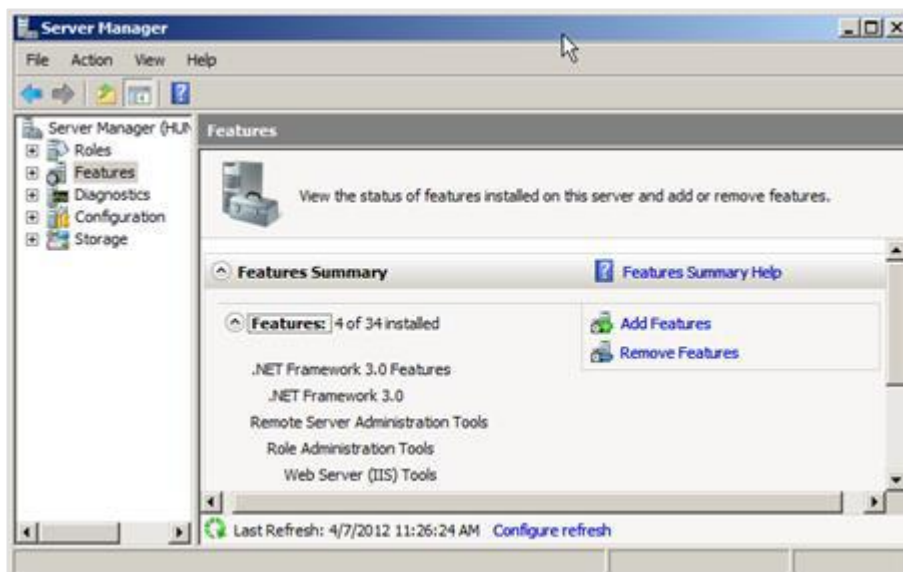
### 7.6.1 Removing unnecessary operating system components

The server machine installed with Microsoft Windows Server 2008 R2 is intended for commonly used applications and data processing. To optimize operations, servers should be configured for dedicated purposes. This means that applications that are not required for the intended purposes should not be installed.

In order to optimize dedicated Microsoft Windows Server 2008 R2 machines for Exact Synergy Enterprise, remove all unnecessary operating system components. In a dual-server or multi-server setup, only IIS should be installed on the web server while all components should be removed for the database server.

#### To remove Microsoft Windows Server 2008 R2 components:

1. Go to Start → All Programs → Administrative Tools → Server Manager.
2. In the left pane, click **Features**.
3. Next, click Remove Features.



4. When you have finished selecting features that you want to remove, click **Next**, and then click **Remove**.

#### Caution:

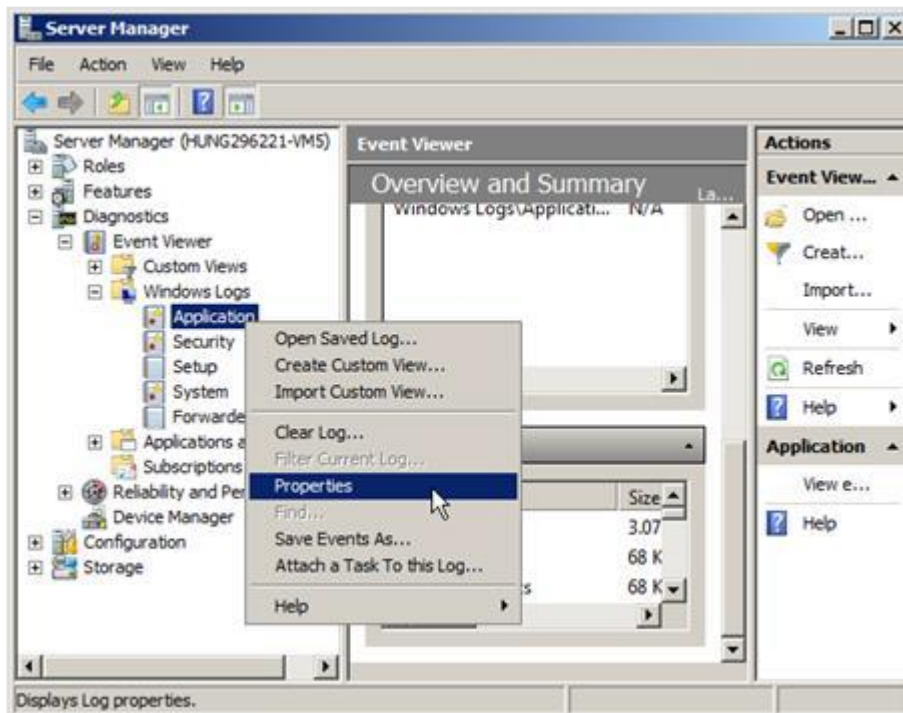
The configuration described is recommended for a dedicated Exact Synergy Enterprise environment. If any of the servers is required to perform other tasks, the required components for the tasks should not be removed.

## 7.6.2 Optimizing operating system log files settings

The Microsoft Windows Server 2008 R2 operating system keeps logs of applications, security, and system events. The file sizes of these event logs can be optimized to maintain server performance.

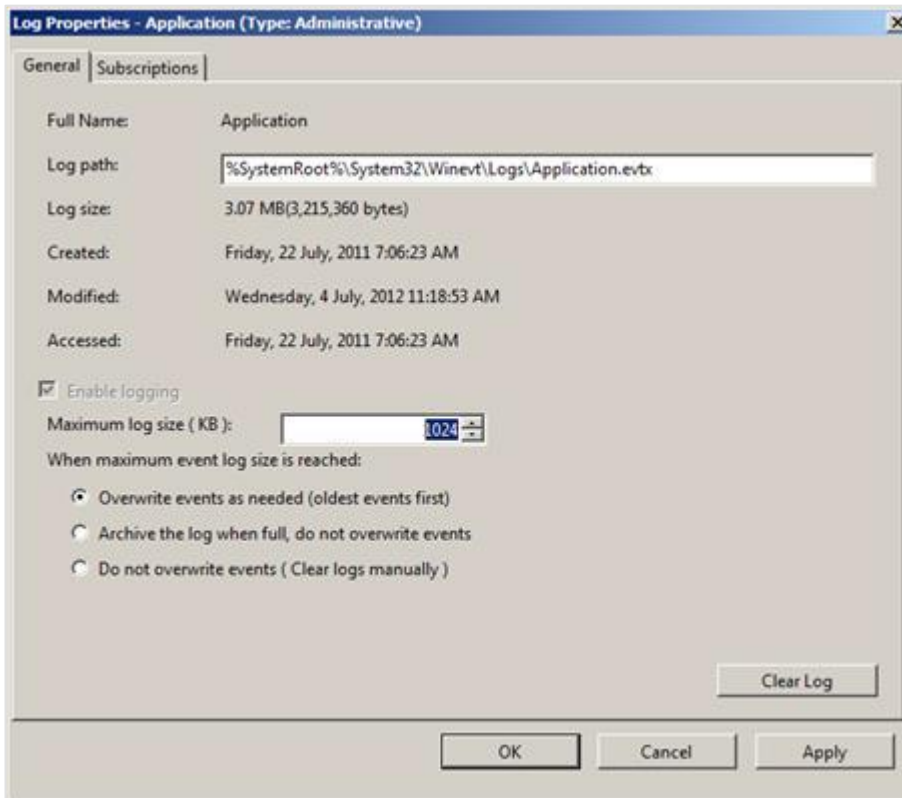
**To optimize Microsoft Windows Server 2008 R2 event logs:**

1. Go to Start → All Programs → Administrative Tools → Server Manager. Expand **Diagnostics**, **Event Viewer**, and **Windows Logs**.





- Right-click the **Application** log and select **Properties**. You will see the following:



- Under the **General** tab, set the **Maximum log size (KB)** field to **1024 KB**.
- At **When maximum** log size is reached, select **Overwrite events** as needed (oldest events first).
- Click **OK** to accept the changes.

Repeat the same procedure for the **Security** and **System** logs. To make the changes effective, right-click each log and select **Clear all Events**. When prompted, you can click **Yes** to save the events currently in the log to a file, or click **No** to discard the log.

### 7.6.3 Optimizing disks for better management

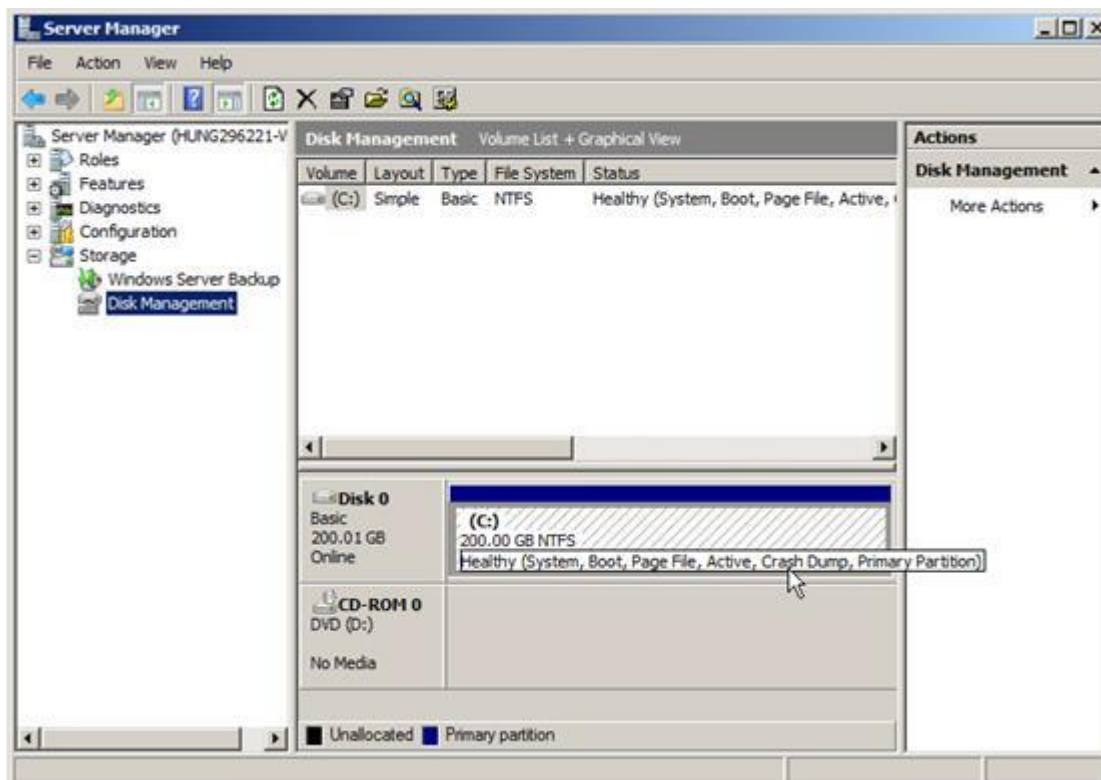
It is good practice to create logical partitions for the server hard disks. Apart from providing a clear structure, this also minimizes data loss in the event of a system crash. A good backup and disaster recovery plan are also recommended.

Generally, the following three logical partitions are recommended:

- System partition for the operating system
- Program partition for applications
- Data partition to store the data

Exact Synergy Enterprise and Microsoft SQL Server 2008 R2 can be installed in the program partition. In a dual-server or multi-server setup, only the system and program partitions are needed for the application server. The database server should have all three partitions.

### Managing disk partitions



You can create and manage logical partitions using the **Disk Management** console in Microsoft Windows Server 2008 R2. To open this management console, go to **Start** → **All Programs** → **Administrative Tools** → **Server Manager** → **Storage** → **Disk Management**. Alternatively, go to **Start** and click **Run**, and then type **diskmgmt.msc** at **Open** and click **OK**.

**Tip:**

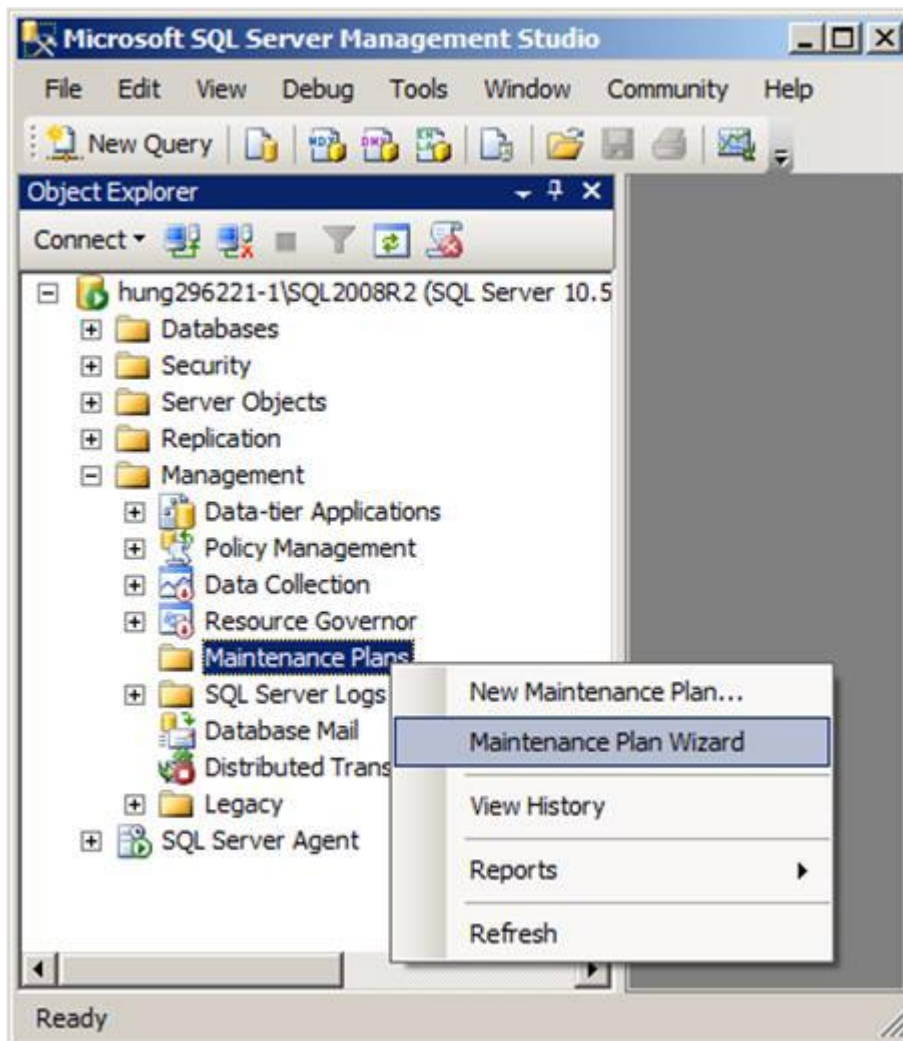
You cannot resize a partition using the **Disk Management** console in Microsoft Windows Server 2008 R2. You should plan the partitions before installing the operating system or use a third-party tool.

## 7.7 SETTING UP SQL DATABASE MAINTENANCE PLAN

A periodic backup maintenance plan can be set up in Microsoft SQL Server 2008 R2 to keep a copy of the Exact Synergy Enterprise database. This can be done using the Microsoft SQL Server 2008 R2 Maintenance Plan Wizard as a preventive measure in case of data loss due to unforeseen circumstances.

To create SQL Server backup plans:

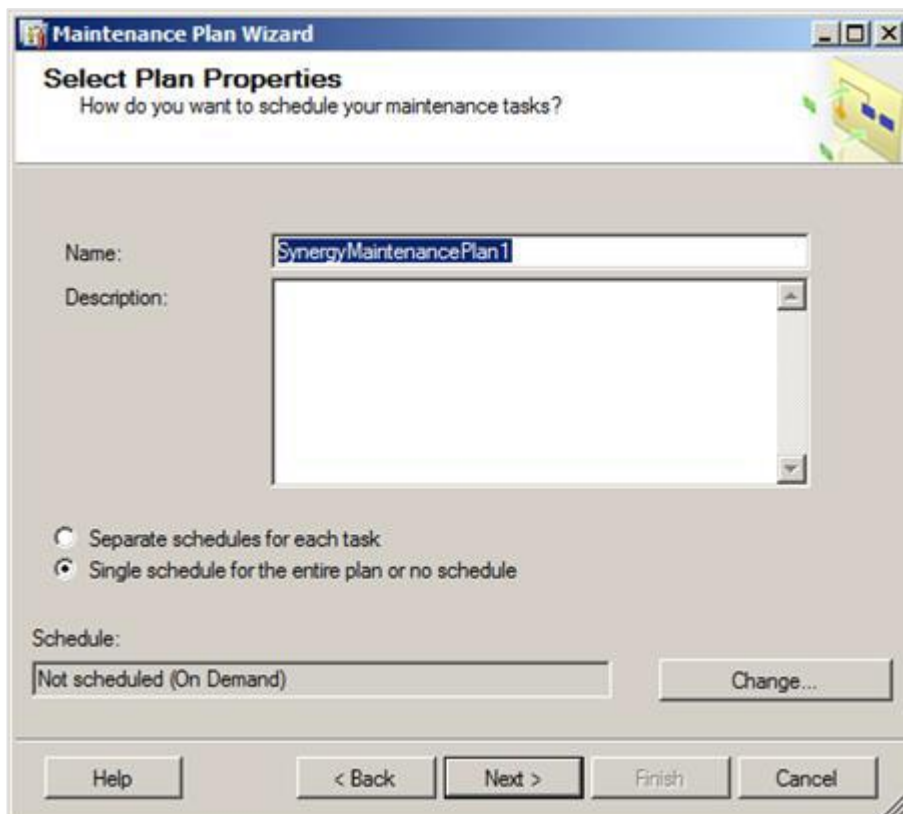
1. Start the **SQL Server Management Studio**.



2. Right-click **Maintenance Plans** in the **Object Explorer** panel, and then click **Maintenance Plan Wizard**.



3. Click **Next**.



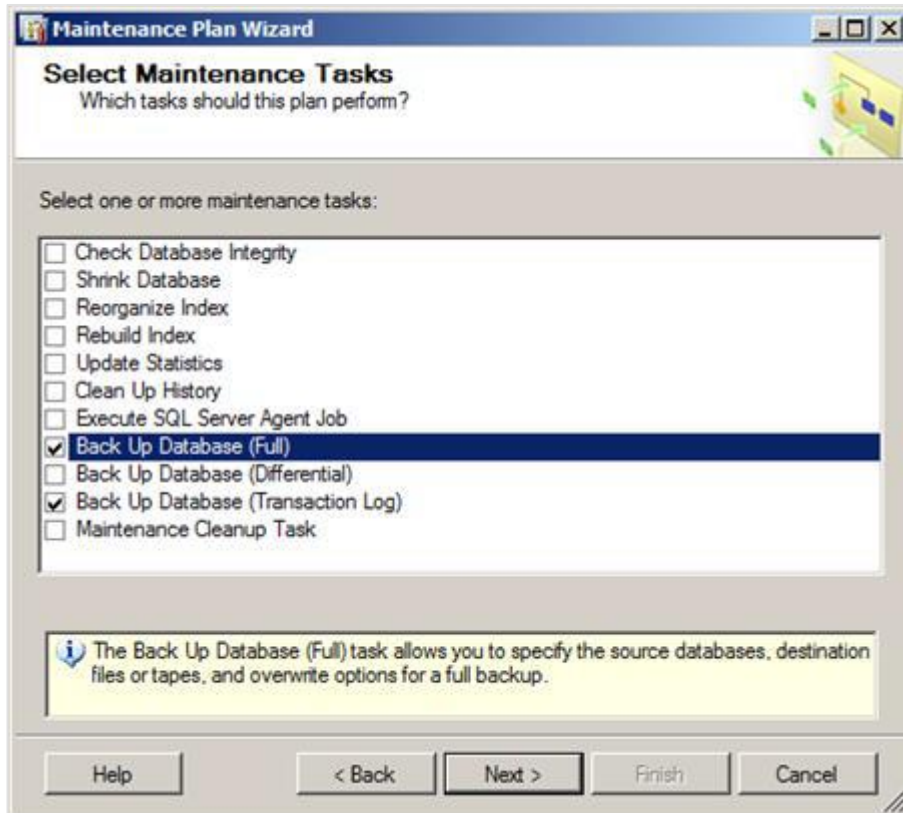
4. Type relevant information at **Name** and **Description**. At **Schedule**, click **Change** to customize the schedule of the backup maintenance plan. Then, click **Next** to continue.

The screenshot shows the 'Job Schedule Properties' dialog box for 'SynergyMaintenancePlan1'. The dialog is organized into several sections:

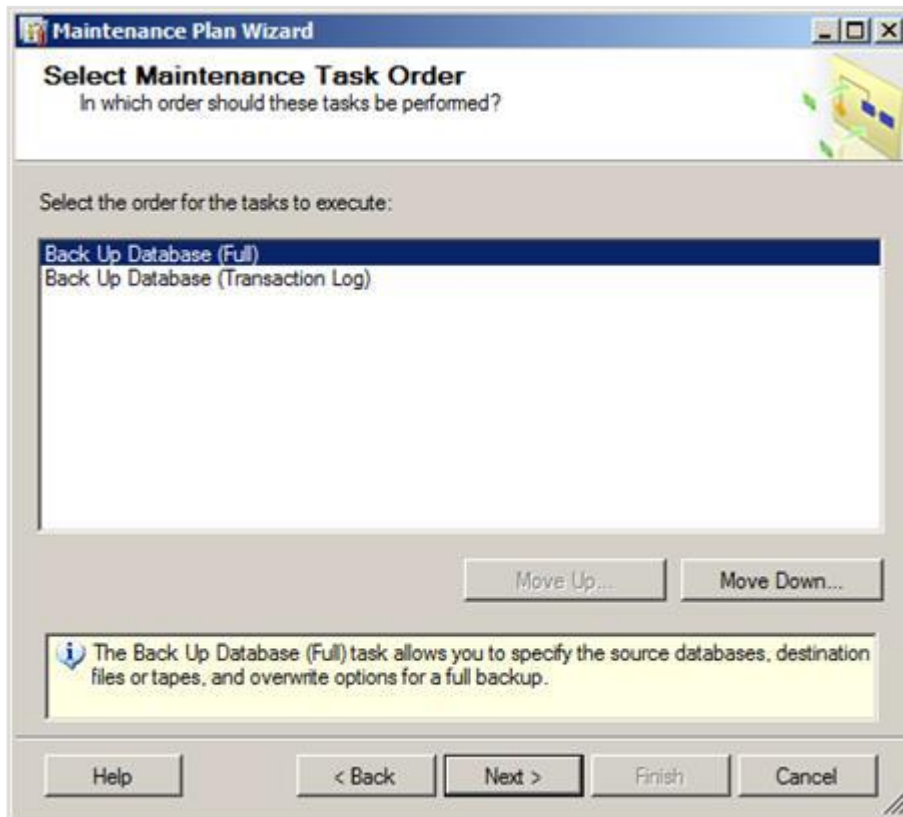
- Name:** SynergyMaintenancePlan1 (with a 'Jobs in Schedule' button).
- Schedule type:** Recurring (with an 'Enabled' checkbox).
- One-time occurrence:** Date: 29/ 6/2012, Time: 8:21:23 PM.
- Frequency:** Occurs: Weekly, Recurs every: 1 week(s) on. Days: Monday, Wednesday, Friday, Saturday, Sunday (Sunday is checked).
- Daily frequency:** Occurs once at: 12:00:00 AM, Occurs every: 1 hour(s), Starting at: 12:00:00 AM, Ending at: 11:59:59 PM.
- Duration:** Start date: 29/ 6/2012, End date: 29/ 6/2012, No end date (checked).
- Summary:** Description: Occurs every week on Sunday at 12:00:00 AM. Schedule will be used starting on 29/6/2012.

Buttons at the bottom: OK, Cancel, Help.

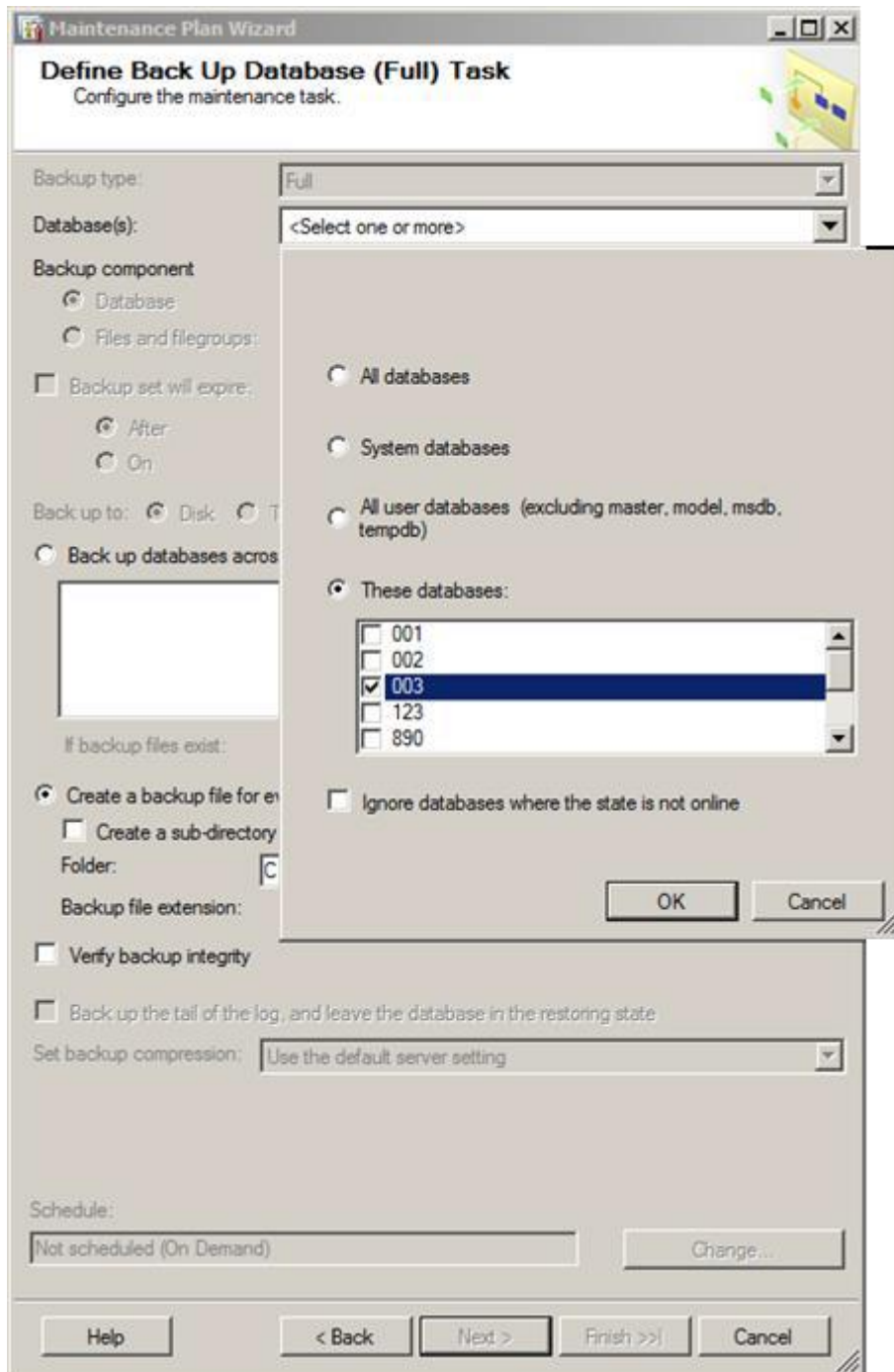
5. The **Job Schedule Properties** screen is available only when you click **Change** on the **Select Plan Properties** screen. Specify the frequency and daily frequency of the backup plan as required under the **Frequency** and **Daily frequency** sections respectively. For example, you can set the backup to occur weekly on Sunday at 8 PM. To continue, click **OK**.



6. Select the relevant check boxes from the list of tasks to be included in the backup maintenance plan. For example, select the **Back Up Database (Full)** and **Back Up Database (Transaction Log)** check boxes. To continue, click **Next**.



- Specify the sequence in which the selected tasks will be performed. Select a task and click **Move Up** or **Move Down** to move the tasks to the preferred sequence. To continue, click **Next**.





8. Select the Exact Synergy Enterprise database to be included in the backup plan.

**Maintenance Plan Wizard**  
**Define Back Up Database (Full) Task**  
 Configure the maintenance task.

Backup type:

Database(s):

Backup component  
 Database  
 Files and filegroups:

Backup set will expire:  
 After  days  
 On

Back up to:  Disk  Tape

Back up databases across one or more files:

If backup files exist:

Create a backup file for every database  
 Create a sub-directory for each database  
 Folder:   
 Backup file extension:

Verify backup integrity

Back up the tail of the log, and leave the database in the restoring state

Set backup compression:

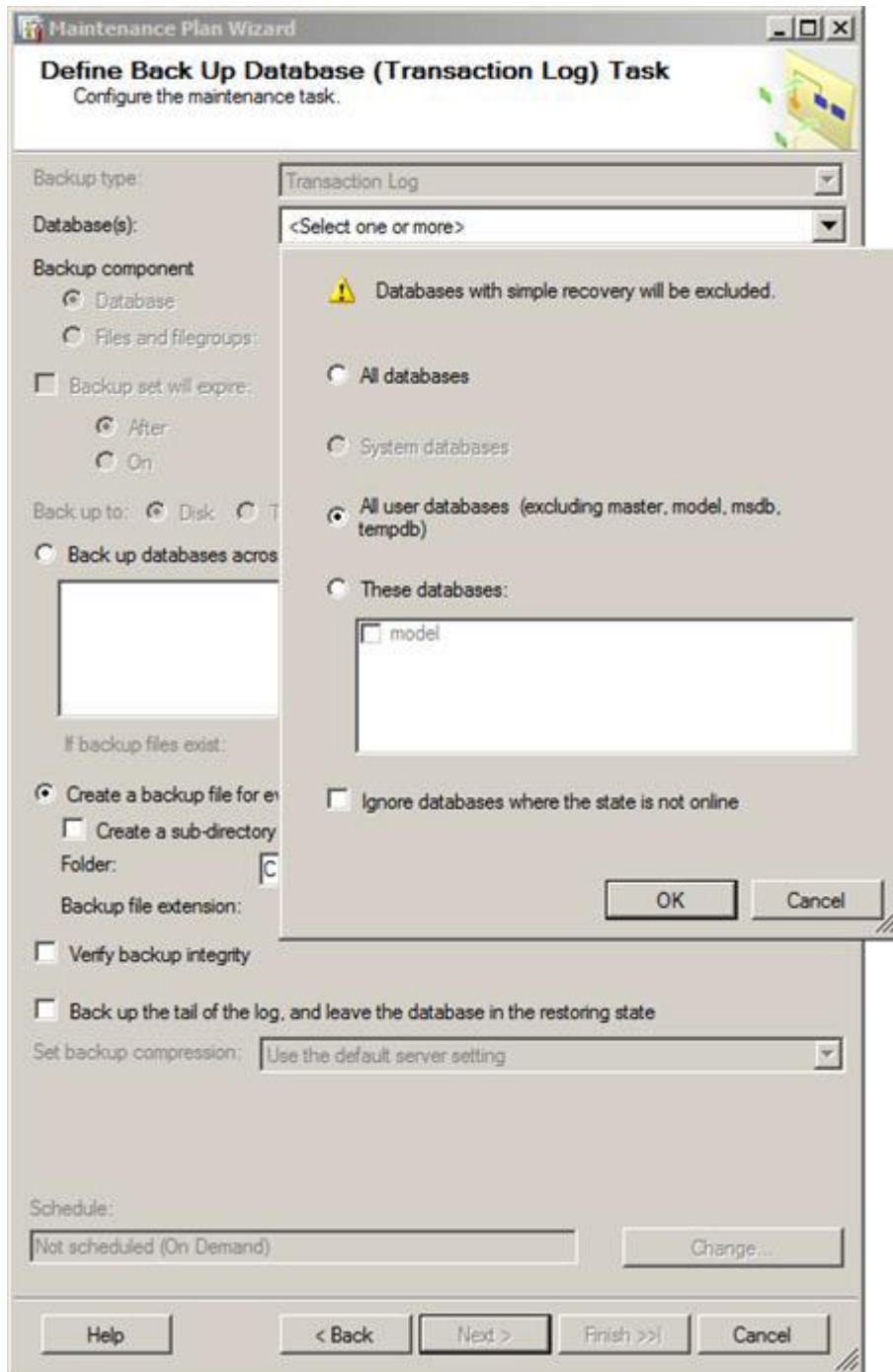
Schedule:

9. Select **Disk** at **Back up to** and select **Create a backup file for every database**. At **Folder**, specify the folder where the backup file will be stored. Select the **Verify backup integrity** check box, and then click **Next** to continue.

10. Since the **Back Up Database (Transaction Log)** check box has been selected earlier as the next backup task, the backup plan wizard will proceed to customize the details of transaction log backup, as shown in the following:

**Note:**

The backup transaction log is only allowed on databases that have the recovery model set to **Full**.



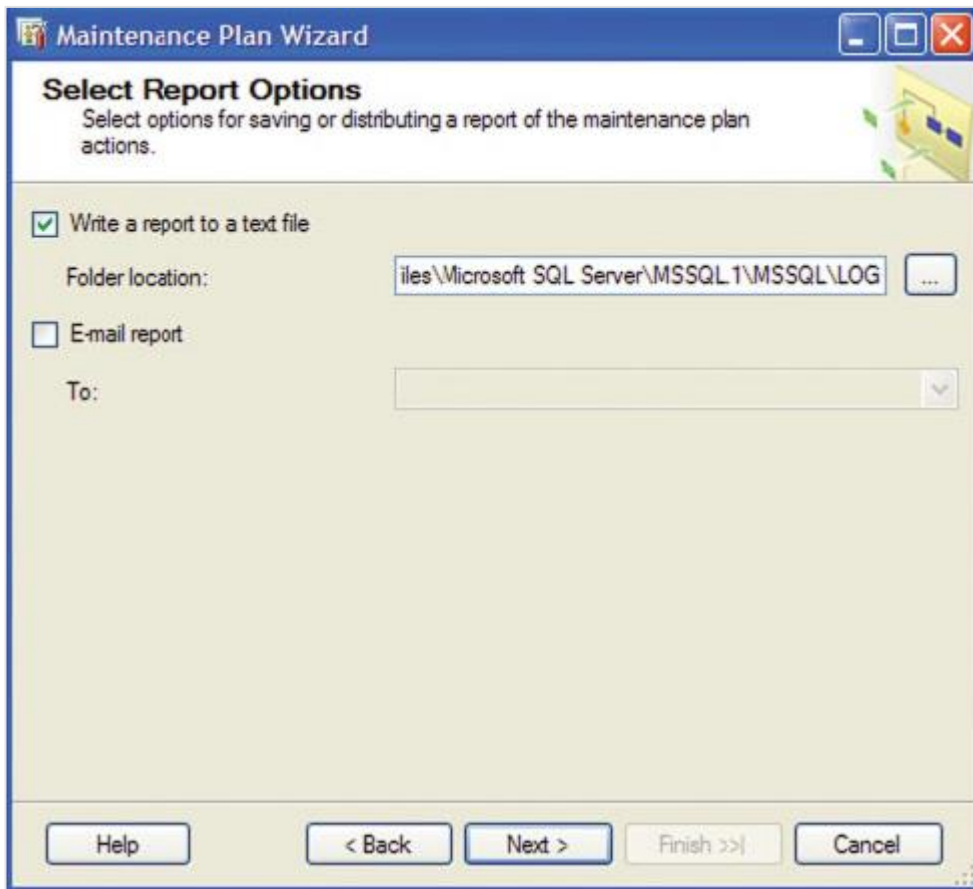
11. Select **All user databases (excluding master, model, msdb, tempdb)** and click **OK**.

The screenshot shows the 'Maintenance Plan Wizard' dialog box, specifically the 'Define Back Up Database (Transaction Log) Task' step. The dialog is titled 'Configure the maintenance task.' and contains the following settings:

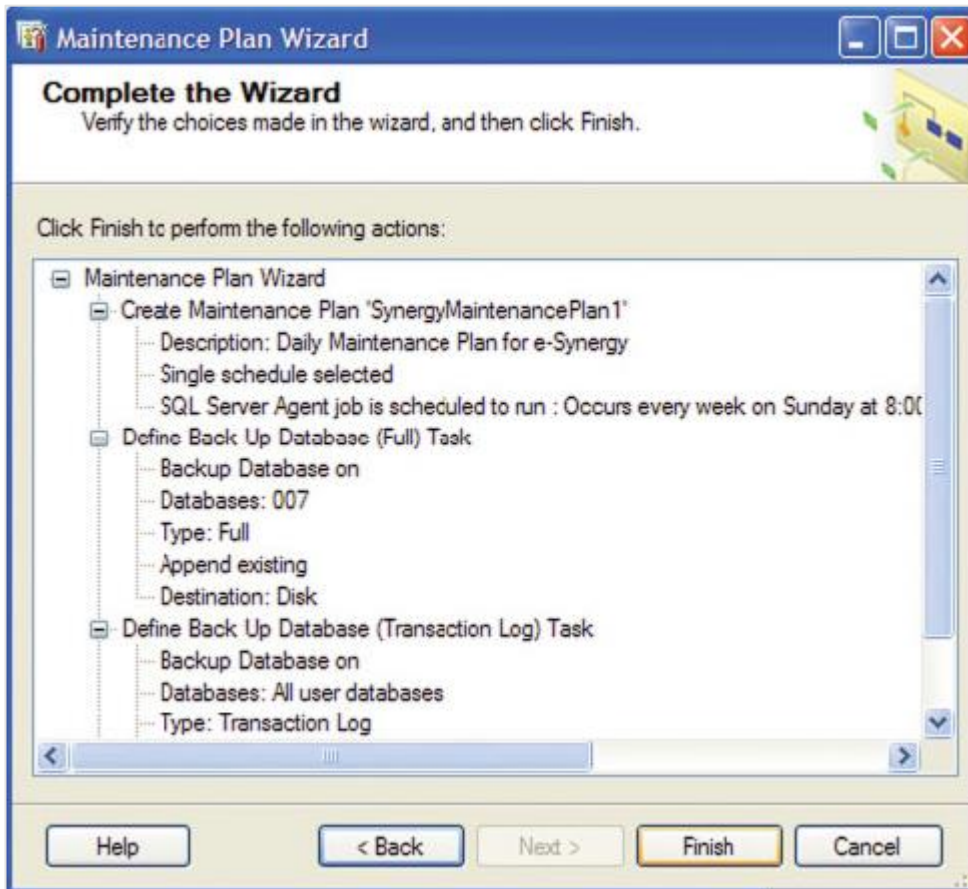
- Backup type:** Transaction Log
- Database(s):** All user databases
- Backup component:** Database (selected)
- Backup set will expire:** After 14 days (selected)
- Back up to:** Disk (selected)
- Back up databases across one or more files:** (empty list)
- If backup files exist:** Append
- Create a backup file for every database:** (selected)
- Create a sub-directory for each database:** (unchecked)
- Folder:** C:\Program Files\Microsoft SQL Server\MSSQL10\_50.SQL2008\ (selected)
- Backup file extension:** tm
- Verify backup integrity:** (checked)
- Back up the tail of the log, and leave the database in the restoring state:** (checked)
- Set backup compression:** Use the default server setting
- Schedule:** Not scheduled (On Demand)

At the bottom of the dialog, there are buttons for 'Help', '< Back', 'Next >', 'Finish >>', and 'Cancel'.

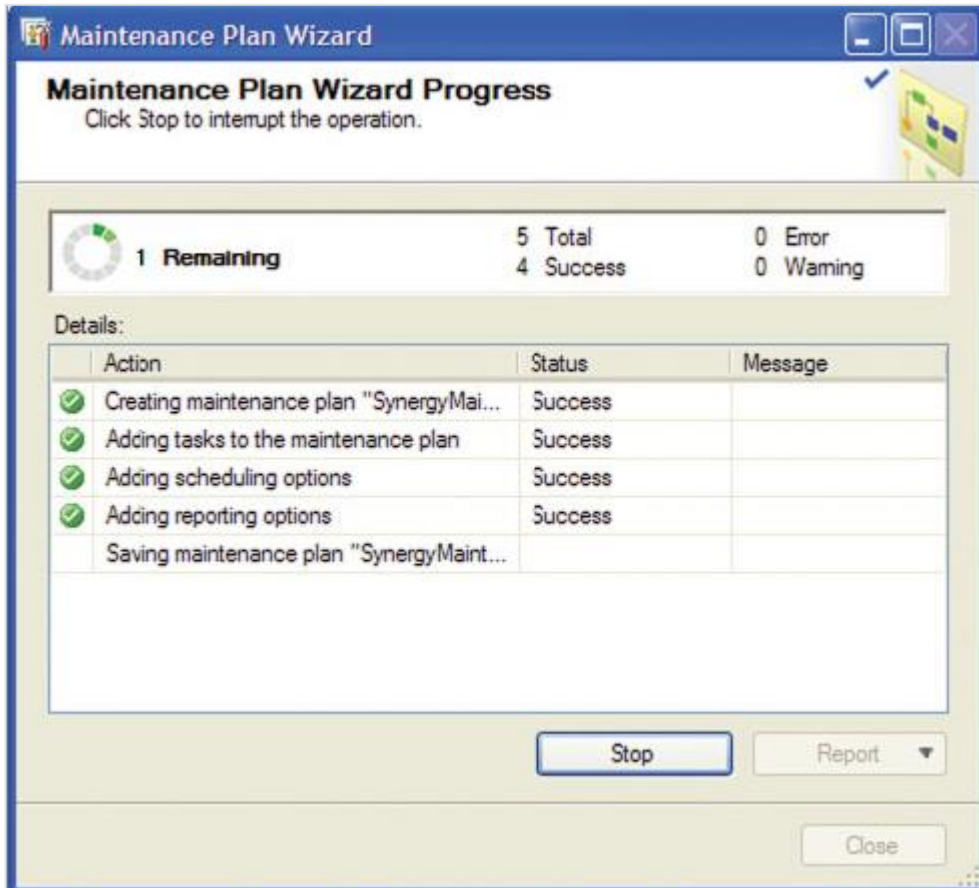
12. Select **Disk** at **Back up to** and select **Create a backup file for every database**. At **Folder**, specify the folder where the backup file will be stored. Select the **Verify backup integrity** check box, and then click **Next** to continue.



13. For reporting options, click **Next** to continue.



14. A summary of actions in the backup maintenance plan will be listed. Read the summary. To complete the backup maintenance plan, click **Finish**.



15. The results of the actions in the backup plan are listed to indicate whether there are any unsuccessful actions. Click **Close** to exit.

## 7.8 EXACT EXCHANGE INTEGRATOR

Exact Synergy Enterprise now supports Microsoft Exchange 2010 and 2013, as well as Exchange Online. This section describes the prerequisites and installation steps required to set up the synchronization between Microsoft Exchange and Exact Synergy Enterprise for product update 254 onwards.

**Note:**

- For product updates 250 to 253, see *Installing Exact Exchange Integrator (Microsoft Exchange 2010) (Doc ID 23.783.632)* at the Exact Synergy Enterprise web site.
- For product updates 244 to 249, see *Installing Exact Exchange Synergy Enterprise Integrator (Exchange 2010) (Doc ID 20.918.101)* at the Exact Synergy Enterprise web site.

This is written with an expectation that all user accounts are on Microsoft Exchange 2010 or higher. References made to Microsoft Exchange in this document refers to Microsoft Exchange 2010 and 2013, unless the specific version is mentioned.

### 7.8.1 Prerequisites

- Personal computer
  - x64 architecture-based (64-bit)
- Operating system
  - Microsoft Windows Server 2008 R2 Standard and Enterprise Edition
- Operating system for installing management tools
  - Microsoft Windows 7 and above
- Exact Synergy Enterprise
  - Product update 254 onwards
- Database system
  - Microsoft SQL Server 2008 R2 and above
- Others
  - Microsoft .NET Framework version 4.7
  - Messaging Queue (MSMQ)
  - For more information, see <http://www.microsoft.com/exchange/2010/en/us/system-requirements.aspx>

## 7.8.2 Service account

This account is to be used for the automated synchronization between Microsoft Exchange Server and Exact Synergy Enterprise. This account has to be a valid user within Exact Synergy Enterprise and Microsoft Exchange Server. This is the same user account that you use to start the background jobs for Microsoft Exchange 2007, or you can create accounts specifically for this synchronization. This account is also used to run the Windows services responsible for the synchronization.

This service account must meet the following requirements:

- This service account exists in the **Active Directory** of the same domain as Exact Synergy Enterprise, or as a local user in the server that is installed with Exact Exchange Integrator.
- This service account must exist in Exact Synergy Enterprise as a person with these function rights:
  - 624 — Entity Services Create: Requests
  - 625 — Entity Services Read: Requests
  - 626 — Entity Services Update: Requests
  - 627 — Entity Services Delete: Requests
  - 641 — Entity Services Create: Binary
  - 642 — Entity Services Read: Binary
  - 643 — Entity Services Update: Binary
  - 644 — Entity Services Delete: Binary
- This service account must exist in the Exchange server, and with a valid e-mail address.
- This service account must be granted impersonation rights in the Exchange server. For more information, see *7.8.3 Assigning impersonation rights to the service account*. For a hosted installation Exchange server (hosted externally and not within the same domain), check with the provider on assigning impersonation rights to the service account.
- The **Autodiscover** service has to be enabled for a hosted installation or Exchange Online. For more information on configuring exchange services for the **Autodiscover** service, see [http://technet.microsoft.com/en-us/library/bb201695\(v=exchg.141\).aspx](http://technet.microsoft.com/en-us/library/bb201695(v=exchg.141).aspx).
- If **Autodiscover** is used and the Exchange server is a hosted installation (Exchange Online, or hosted externally and not within the same domain), the service account must use the same password in the Exchange server and Exact Synergy Enterprise.



### 7.8.3 Assigning impersonation rights to the service account

Exchange Impersonation enables a service account to impersonate given user accounts. This enables the service account to perform operations by using the permissions that are associated with the impersonated accounts, instead of the permissions that are associated with the service account. For more information, see <http://msdn.microsoft.com/en-us/library/bb204095.aspx>.

**Note:**

The setting up of the application impersonation for Exchange Online is different. For more information, see *Assigning Application Impersonation in Exchange Online/Office 365 (Doc ID 23.837.651)* at the Exact Synergy Enterprise web site.

**To assign impersonation rights to the service account:**

1. Log in to the Exchange server as an administrator.
2. Open Exchange Management Shell.
3. Run **New-ManagementRoleAssignment** cmdlet and type the command based on the following parameters:

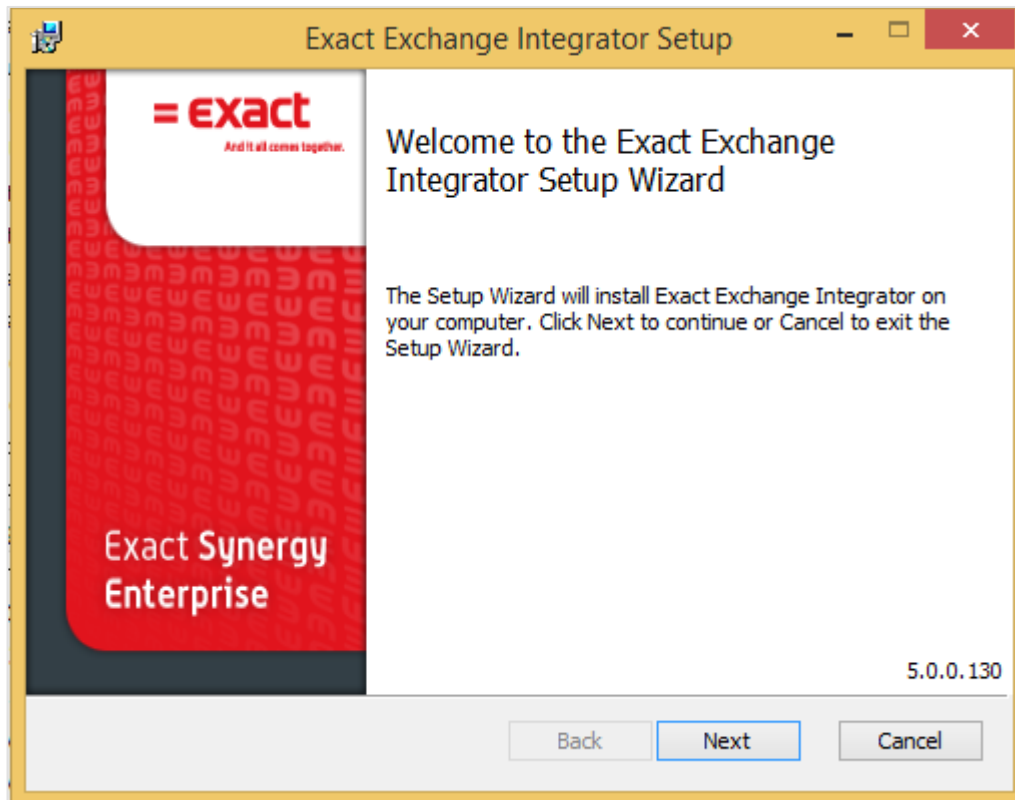
```
New-ManagementRoleAssignment -Name:<impersonationAssignmentName> -  
Role:ApplicationImpersonation -User:<service account>
```

- **impersonationAssignmentName** — This refers to the friendly name of the role assignment.
- **service account** — This refers to the service account created above.

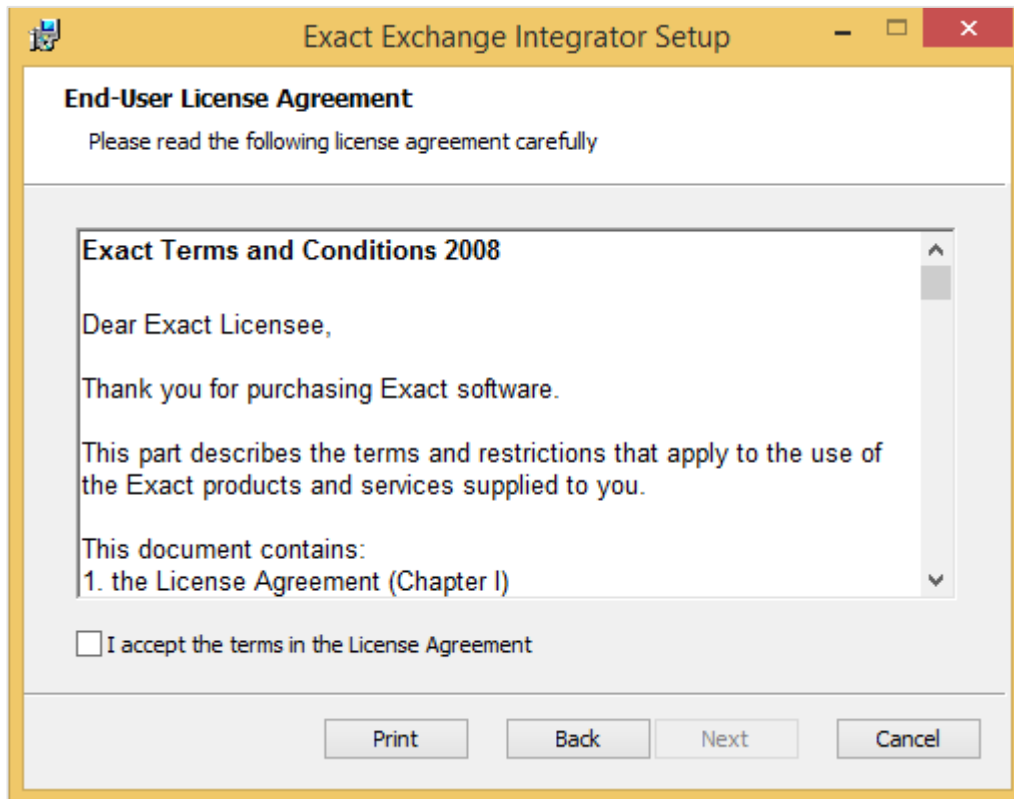
## 7.8.4 Installing Exact Exchange Integrator

In typical scenarios, Exact Synergy Enterprise is installed on individual web servers and job servers are set up in similar methods. In some cases, both the job and web servers can reside on one physical server.

1. Run the deployment package **ExchangeIntegrator.msi** on the server side. This can be found in the **cab** folder of the Exact Synergy Enterprise installation folder. The **Exact Exchange Integrator Setup** wizard will be displayed.



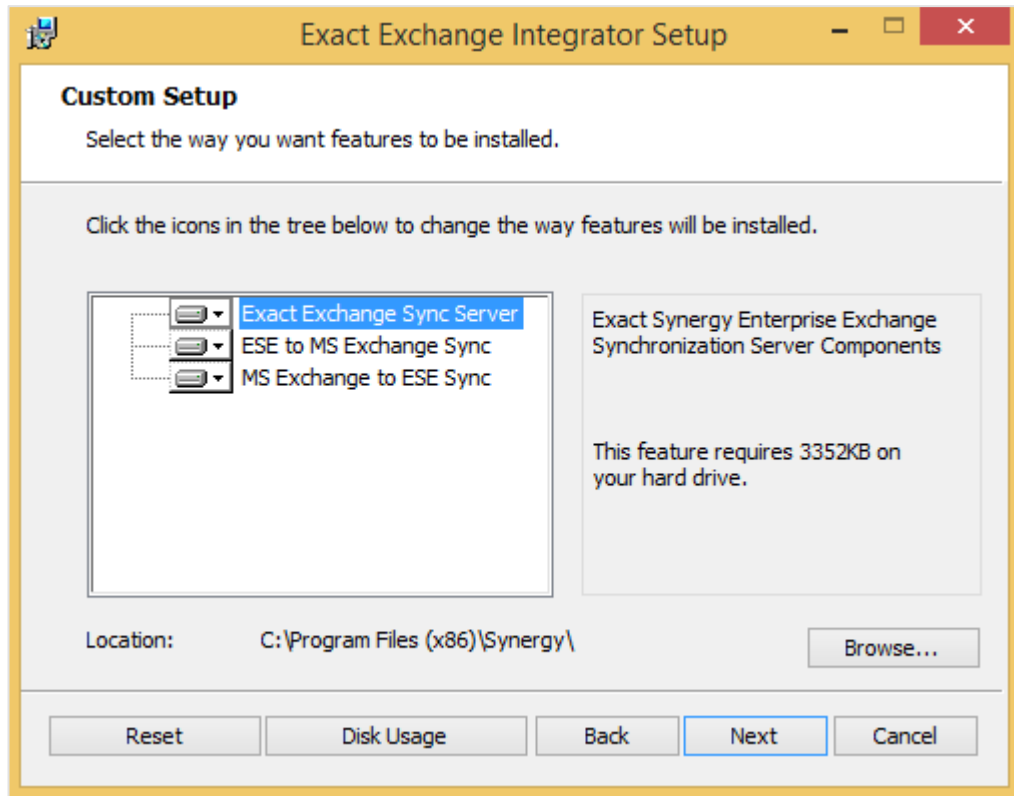
2. Click **Next**. The **Prerequisite Information** page will be displayed if any missing prerequisites are found on the server. The prerequisites must be installed before proceeding. For more information, see 7.8.1 *Prerequisites*. Click **Next**.



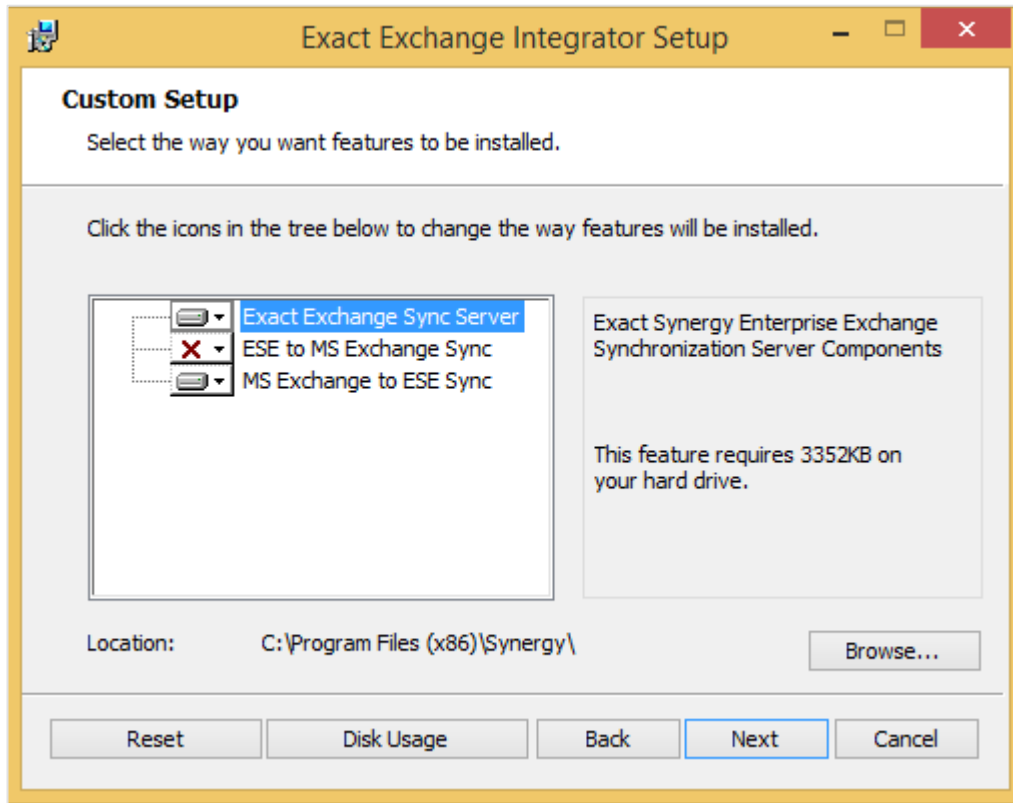
3. Select I accept the terms in the License Agreement, and then click Next.
4. On the **Custom Setup** page, options **Exact Exchange Sync Server**, **ESE to MS Exchange Sync**, and **MS Exchange to ESE** are available. The first feature, which is **Exact Exchange Sync Server** must be installed regardless of whether the services are installed on a single physical server or multiple physical servers or which synchronization direction is to be installed. Install the remaining features based on scenario A or B, as explained in the following:

## Scenario A: Installing on multiple physical servers

- Web server
  - Select the option ESE to MS Exchange Sync, and then click Browse to browse for the Exact Synergy Enterprise installation folder.
  - Disable the feature MS Exchange to ESE Sync, and then click Next.

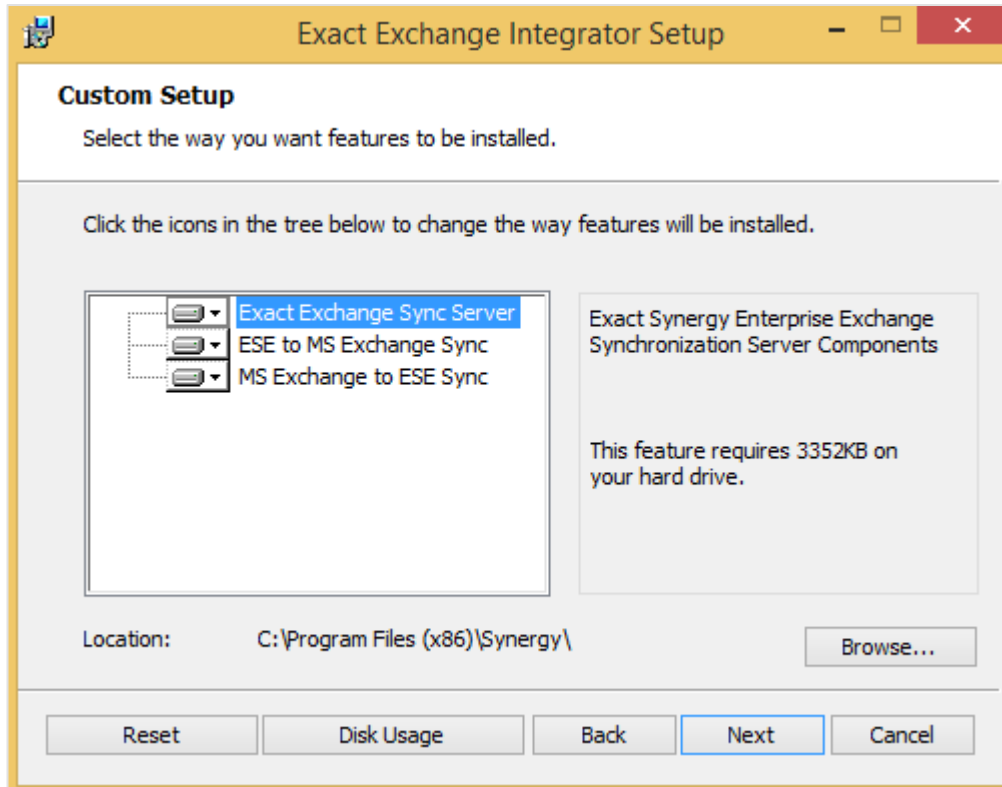


- Job server
  - Select the option MS Exchange to ESE Sync, and then click Browse to browse for the Exact Synergy Enterprise installation folder.
  - Disable the feature ESE to MS Exchange Sync, and then click Next.



Scenario B: Installing on a single physical server

- Choose the features to install, depending on the preferred direction of the synchronization. If both directions are required to be installed, all options need to be selected. Click **Browse** to browse for the Exact Synergy Enterprise installation folder.
- Click **Next**.



5. Define the following fields, and then click **Next**.

- **Exact Synergy Enterprise SQL Server**

Type the SQL Server of the database for Exact Synergy Enterprise. If the SQL Server name contains an instance, for example "DataServer\SQL2014", the SQL Server instance should be case-sensitive.

- **Exact Synergy Enterprise Database**

Type the Exact Synergy Enterprise database name.

- **Exact Synergy Enterprise Web Address**

You need to create a virtual directory on the server that is installed with Exact Exchange Integrator to connect to the Exact Synergy Enterprise web site. For example, when you create a virtual directory called **Synergy** to connect to Exact Synergy Enterprise, the web address might be <server name>/**Synergy**. Then in the wizard, use <server name>/**Synergy** as the Exact Synergy Enterprise web address.

**Exact Synergy Enterprise**  
Please enter the following information to configure the installation

Exact Synergy Enterprise SQL Server  
DataServer\SQL2014

Exact Synergy Enterprise Database  
ESEDB

Exact Synergy Enterprise Web Address  
http://customer.exact.com

Back Next Cancel

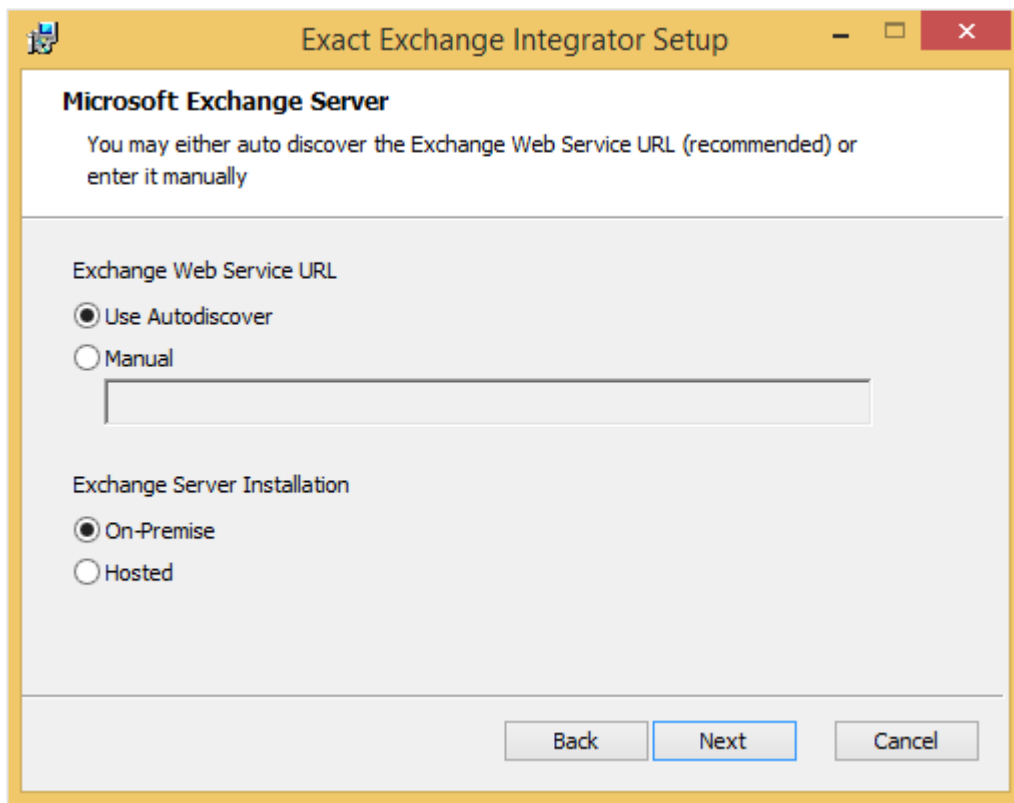
6. Choose the appropriate options, and then click **Next**.

- **Exchange Web Service URL**

Select **Use Autodiscover** so that the Microsoft Exchange URL will be discovered automatically by the synchronization service. For the Exchange Online server version or a hosted environment, the **Use Autodiscover** check box must be selected. Otherwise, select the **Manual** option and provide a fixed URL. Type the Exchange Web Service URL in the text box.

- **Exchange Server Installation**

Select either **On-Premise** or **Hosted** to determine whether the Exchange server is on premise or hosted externally. The Exchange Online server version is hosted externally, hence **Hosted** has to be selected.





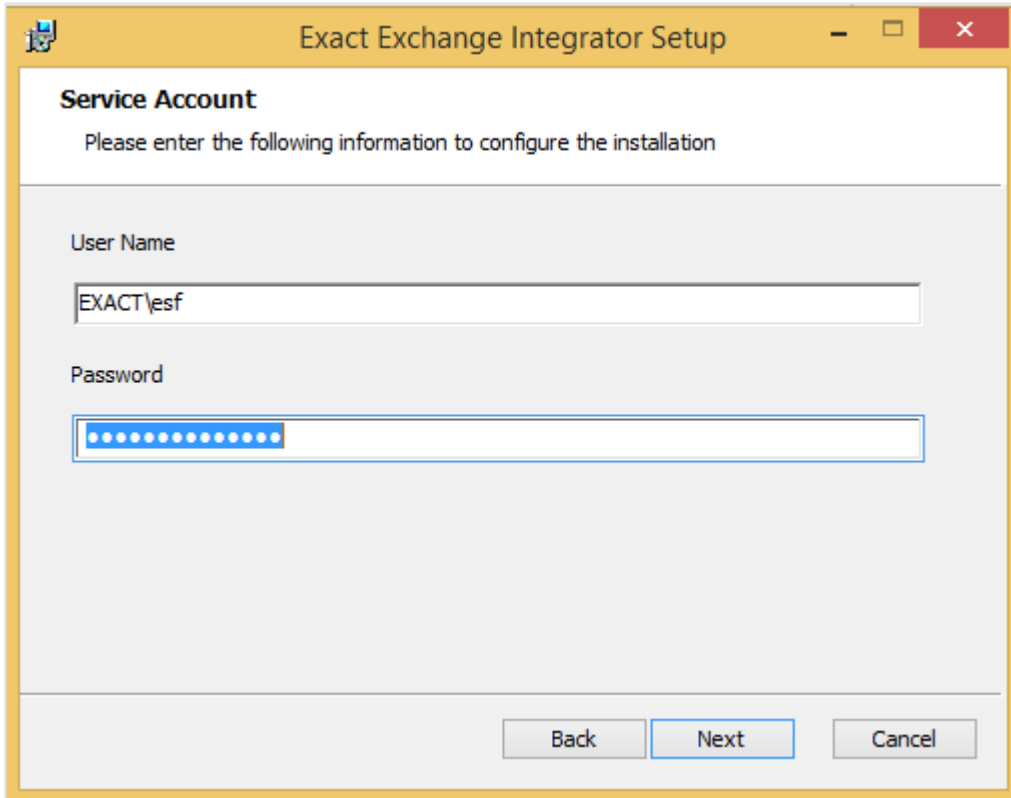
7. Define the **User Name** and **Password**, and then click **Next**.

- **User Name**

Type the service account name. For more information, see *7.8.2 Service account*. For example, “<domain>\<service account>”, “<machine name>\<service account>”. For the Exchange Online server version, use “<domain>\<service account>”.

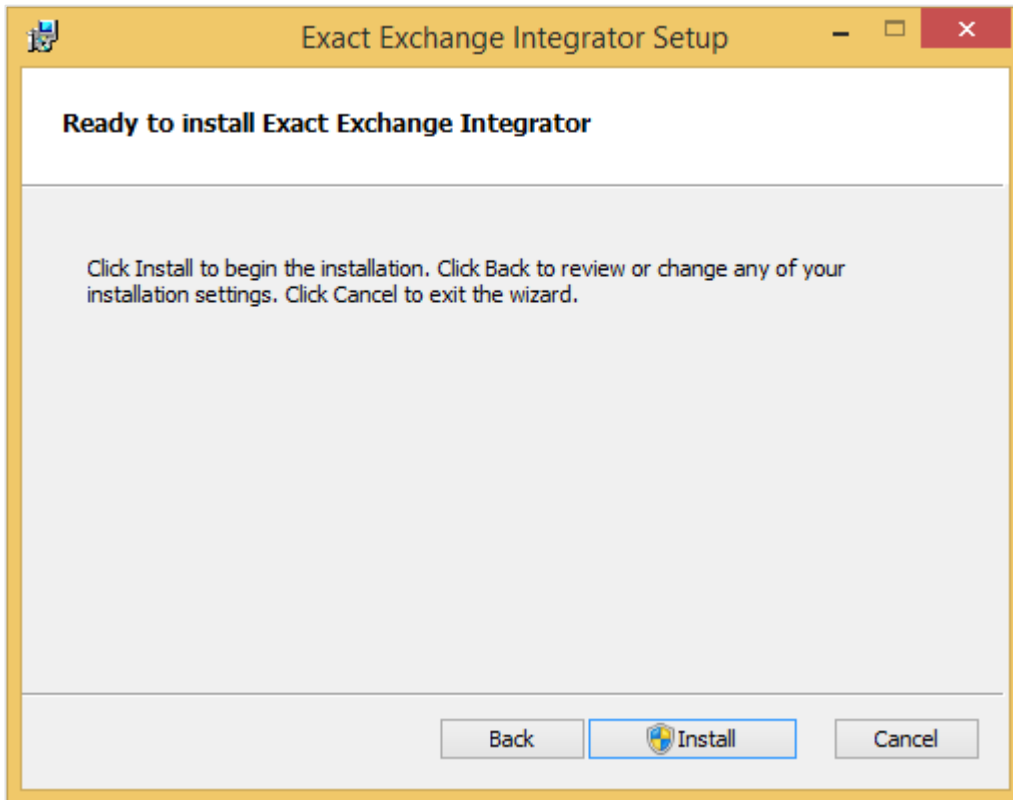
- **Password**

Type a password for the service account. For the Exchange Online server version or hosted exchange server version, the password has to be the same as in Exact Synergy Enterprise and Exchange Online or the hosted environment.



The screenshot shows a Windows-style dialog box titled "Exact Exchange Integrator Setup". The main heading is "Service Account" with the instruction "Please enter the following information to configure the installation". There are two input fields: "User Name" containing "EXACT\esf" and "Password" which is currently obscured by a series of dots. At the bottom, there are three buttons: "Back", "Next", and "Cancel".

- Exact Exchange Integrator is now ready to install. Click **Install**.



- Once the installation has completed, click **Finish** to exit.

10. After the installation has completed, follow instructions in the following to encrypt the password for the service account and store it to the configuration file:
  - In the same server that Exact Exchange Integrator is installed, go to Start → Command Prompt.
  - In Command Prompt, go to folder <Exact Synergy Enterprise installation folder>\bin.
  - Type in this command, GeneratePassword.exe "<service account password>", then press Enter.

**Note:**

You must include the quote (" ").

- Exit from Command Prompt.
- For the Exchange Online server version, make the following change in the **Exact.MacroManager.Exchange.config**:
  - Browse to the Exact Exchange integrator \ XML folder, and open the **Exact.MacroManager.Exchange.config** file using Notepad. Look for the <macro id="eseauthn">, and change the value to "1". The reason you make this change in **Exact.MacroManager.Exchange.config** is that **Basic Authentication** is a must for Exchange Online. In notation of Exact Exchange Integrator, "1" means 'Exact Synergy Enterprise is using the **Basic Authentication**'.
  - In IIS, ensure that the **Basic Authentication** is "Enabled" for Synergy application.
- Restart Windows services:
  - Exact Exchange Synchronization Puller Monitor
  - Exact Exchange Synchronization Resolver Monitor

### 7.8.5 Performing checks after installation

Next, you need to verify if the process has been completed successfully by doing the following:

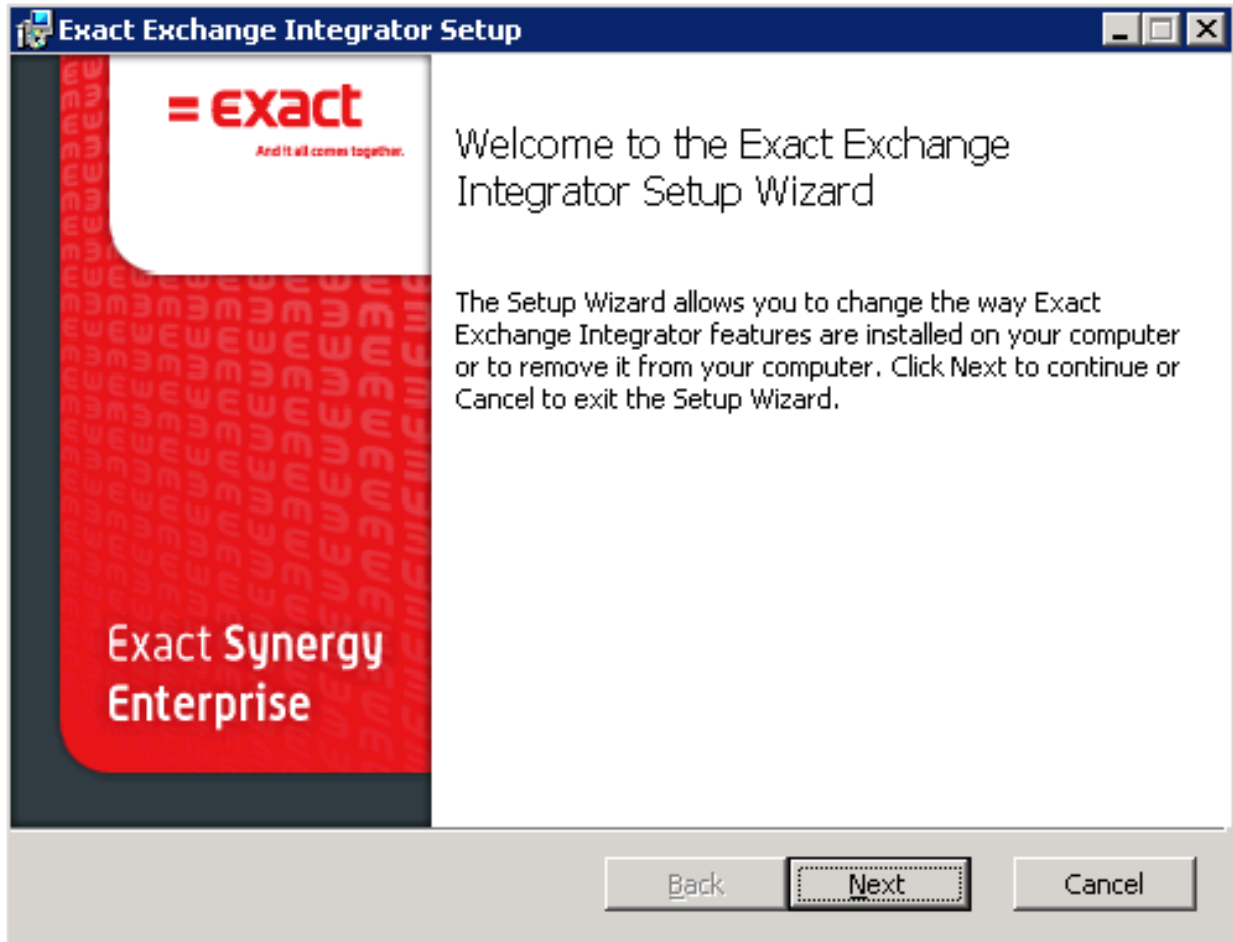
1. Go to Computer management → Event viewer → Window logs → Application. Make sure there is no installation error from **ExchangeIntegrator.msi**.
2. Go to Computer management → Services. Make sure the following services are installed and started by default:
  - **Exact Exchange Synchronization Puller Monitor** (for multiple physical servers installation, only installed on the background job server).
  - **Exact Exchange Synchronization Resolver Monitor** (installed on both the background job and web servers).

## 7.8.6 Uninstalling Exact Exchange Integrator

There are two ways to uninstall the Exact Exchange Integrator.

### To uninstall via MSI:

1. Run the deployment package **ExchangeIntegrator.msi** on the server side.



2. Click **Remove** to uninstall.

### To uninstall via Add/Remove programs:

1. Go to **Start** and click **Control Panel**.
2. Search for the application **Exact Exchange Integrator**.
3. Select the application and click **Uninstall** or **Remove** (depending on the operating system).

### 7.8.7 Defining parameters

After installing Exact Exchange Integrator, the administrator is able to change some settings of the synchronization framework via the configuration file called **Exact.MacroManager.Exchange.config**, which is deployed to two different folders:

- The **XMD** folder of Exact Synergy Enterprise installation. For example, C:\Program Files\Exact Synergy Enterprise\xmd
- The **XMD** folder of Exchange Integrator inside the Exact Synergy Enterprise installation folder. For example, C:\Program Files\Exact Synergy Enterprise\Exchange Integrator\xmd

**Note:**

Any changes made to the configuration file will require Windows services in both the web server and job server to be restarted. For more information, see *7.8.5 Performing checks after installation*.

Each setting in the configuration file is a pair of **macro** and **value**. **Macro** is the name of the setting and **value** is the value of the setting.

#### Parameters

- **eseexchadministration**  
Do not modify this setting. Modifying this setting will cause the synchronization to fail.
- **exchadministration**  
Do not modify this setting. Modifying this setting will cause the synchronization to fail.
- **eseexchconnectionparams**  
This setting defines the SQL Server, SQL database, and application path of Exact Synergy Enterprise.
  - **/S** — The SQL Server of the Exact Synergy Enterprise database.
  - **/D** — The SQL database of the Exact Synergy Enterprise.
  - **/APP** — The path where Exact Synergy Enterprise is installed.
- **exchconnectionparams**  
This is the Exchange Web Service URL. If **Use Autodiscover** is selected, this setting is blank.
- **autodiscover**  
This setting determines whether the Exchange Web Services URL is discovered using autodiscover or a manual fixed URL.
  - **0** — Using manual fixed URL. Parameter **exchconnectionparams** must be defined with Exchange Web Service URL.
  - **1** — Using autodiscover. Parameter **exchconnectionparams** is blank.
- **exchangeinstallation**  
This setting determines whether the Exchange server is an on-premise installation or hosted installation.
  - **1** — Exchange server is an on-premise installation.
  - **2** — Exchange server is a hosted installation.
- **exchfixeduser**  
This is the service account used for the synchronization process.

- **Exchfixeduserpassword**
  - This is the encrypted password of the service account. This password is required if autodiscover is used.
  - This password can be updated to the configuration file via command **GeneratePassword.exe**. For more information, see *7.9.4 Installing Exact Exchange Integrator*.
- **Exchpullerinterval**
  - This setting is defined in the unit of seconds.
  - The default is 60 seconds.
  - This setting affects synchronization from the Exchange server to Exact Synergy Enterprise.
  - The Windows service **Exact Exchange Synchronization Puller Monitor** is responsible to pull all notifications related to any creations, updates, or deletions of appointments from the Exchange server, and this action will be carried out at every interval defined in this setting.
  - For example, if the setting is 60 seconds, **Exact Exchange Synchronization Puller Monitor** will connect to the Exchange server every 60 seconds and check for any new notifications, and pull all of them and submit for the synchronization process.
- **Exchpullertouchcheckfreq**
  - This setting is defined in the unit of minutes.
  - The default is 1,440 minutes.
  - This setting affects the synchronization of recurring appointments with no end date, from the Exchange server to Exact Synergy Enterprise.
  - The Windows service **Exact Exchange Synchronization Puller Monitor** is responsible for checking for any notification on recurring appointments with no end date from the Exchange server. This action will be carried out at every interval defined in this setting.
  - For example, if the setting is 1,440 minutes, **Exact Exchange Synchronization Puller Monitor** will connect to the Exchange server every 1,440 minutes and retrieve recurring appointments with no end date and submit for the synchronization process.
  - For more information on synchronization of recurring appointments with no end date, see *Understanding recurring appointments with no end date (Doc ID 23.790.522)* at the Exact Synergy Enterprise web site.
- **Exchpullertouchinterval**
  - This setting is defined in the unit of days.
  - The default is 90 days.
  - Recurring appointments with no end date will be updated and extended to the corresponding appointments in Exact Synergy Enterprise to not more than the number of days defined from the last updated appointment date in the series. For example, if the setting is 90 days, the corresponding recurring appointments in Exact Synergy Enterprise will be extended to not more than 90 days from the last updated appointment date in the series.
  - For more information on synchronization of recurring appointments with no end date, see *Understanding recurring appointments with no end date (Doc ID 23.790.522)* at the Exact Synergy Enterprise web site.
- **eseexchqueue**  
Do not modify this setting. Modifying this setting will cause the synchronization to fail.
- **eseurl**  
This is the Exact Synergy Enterprise web address.
- **eseauthn**  
This setting defines whether Exact Synergy Enterprise is using the **Basic** or **Integrated** authentication.
  - **0** — Exact Synergy Enterprise is using the **Integrated** authentication.
  - **1** — Exact Synergy Enterprise is using the **Basic** authentication. Using this setting, **exchfixeduserpassword** must be defined.

- L
  - This setting defines the path and name of the synchronization log file.
  - The default is **C:\synclog**. It means the synchronization log file will be created in the root of C: drive, with the file name starts with **synclog**.
  - The final file name will have date and time appended to the file name and with the extension log. For example, **C:\synclog\_20120727\_152537.log**.
  - If the synchronization log file is to be created in a folder, the user must create the folder as the synchronization will not create the folder.
  - For example, if the synchronization log file is to be created to the folder **exchlog** in drive **C:** with the file name starting with **synclog**, the folder **exchlog** must be created in drive **C:**, and the setting will be defined as **C:\exchlog\synclog**. This setting defines the path and name of the synchronization log file.
- DST
  - Daylight saving time setting for recurring appointment synchronization.
  - **0** — Adjustment without DST time format. Recurring appointments in Exact Synergy Enterprise will be updated if the last modified timestamp of the appointment from the Exchange server is more recent compared to the timestamp when the synchronization was last executed.
  - **2** — Adjustment according to DST time format. Recurring appointment types will always be updated, regardless of the timestamp.
- Z
  - This setting allows users to be excluded from the synchronization processes.
  - The setting uses the **person id (res\_id** in the table **Humres**).
  - The **person id** list is comma (,) separated.
- R
  - This setting defines which user is allowed for synchronization processes.
  - Only the user listed here is allowed for synchronization; an empty list means everyone is allowed.
  - The setting uses the **person id (res\_id** in the table **Humres**).
  - The **person id** list is comma (,) separated.



### 7.8.8 Frequently asked questions

1. Why do I get the error, "The HTTP request is unauthorized with the client authentication scheme "Negotiate". The authentication header received from the server was "NTLM"."? How do I solve this error?

To solve the error, disable the loopback check in the registry, as explained in the following steps:

- In the Registry Editor, locate and click the registry key, HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa
- Create the value **DisableLoopbackCheck** and enter **1** in the **Value** data box
- Click **OK**.
- Restart your PC.

For more information, see *Authenticate problems by using of NTLM* at [http://developers.de/blogs/damir\\_dobric/archive/2009/08/28/authentication-problems-by-using-of-ntlm.aspx](http://developers.de/blogs/damir_dobric/archive/2009/08/28/authentication-problems-by-using-of-ntlm.aspx).

2. Why do I get the error message "Not supported Exchange server version" when synchronizing to the Exchange server? How do I solve this error?

This error is due to the Exchange server version defined in Exact Synergy Enterprise and it does not correspond to the actual Exchange server version. To solve this, perform the steps in the following:

- Log in to Exact Synergy Enterprise.
- Go to Modules → HRM → Setup → General → Settings.
- Under the **Server** section, select the **create Exchange Mailbox** check box at **Domain: New – People (Pre-Win2000)** and select the appropriate version from the dropdown list at the **Exchange server version** field.
- Click **Save**, and then **Close**.

3. Why do I need to back up the configuration file Exact.MacroManager.Exchange.config before I make any changes? Where should I keep the older version?

It is always good to create a backup of the configuration file before making changes to it, but be aware of where to keep the backup file. Do not keep the backup file in the folder that houses the configuration file.

# 8. ADDITIONAL INFORMATION

## 8.1 ONLINE CUSTOMER SERVICE

Exact offers comprehensive telephone and online support to its customers, with measured and proven responsiveness. In addition to quality support, you will have a variety of tools to help you get the most from your service plan.

Log on to the Exact customer portal at <https://customers.exact.com/> or the reseller portal at <https://partners.exact.com>. You will need an ID and password to log on. If you do not have an ID and would like to request one, please contact our Customer Support Representative.

## 8.2 ABOUT EXACT SOFTWARE

Established in 1984, Exact is one of the world's leading providers of business software solutions. Its integrated solutions comprise traditional Enterprise Resource Planning (ERP) as well as related software solutions, such as Human Resource Management (HRM), Customer Relationship Management (CRM), Project Management, and Electronic Workflow.

Exact is headquartered in Delft, the Netherlands and has offices in Europe, the Middle East, North and South America, Asia, Australia, and Africa. With around 2,700 employees, subsidiaries in more than 40 countries, and solutions available in 40 languages, Exact currently serves customers in more than 125 countries across all five continents.

Exact Holding N.V. has been listed on Eurolist by Euronext Amsterdam since June 1999.

# APPENDIX A: WEB GARDEN IN IIS NOT COMPATIBLE WITH EXACT SYNERGY ENTERPRISE

Microsoft Windows Server 2003 is shipped with version 6.0 of Microsoft Internet Information Services (IIS). In this version of IIS, the Web garden is introduced.

A Web garden is an application pool served by more than one worker process. This functionality is not compatible with Exact Synergy Enterprise because a Web garden does not support ASP session state. This means that the maximum number of worker processes for the application pool to which Exact Synergy Enterprise belongs needs to be "1".

Exact Synergy Enterprise uses session state information to avoid unnecessary database queries. This means that some information of the current connection is stored within the session. Because ASP session data is kept inside the worker process, session data gets lost when a request is served by a different worker process.

IIS maps the requests to worker processes using the client IP address and source port. If an application keeps a connection alive and uses the same source port, its requests get routed back to the right worker process. However, if the application does not keep a connection open, or the source port differs, the next request will be routed to any of the worker processes. The source port can differ if the client has to go through a proxy or firewall. In this case, the client cannot be guaranteed to always use the same source port.

For more information see *IIS 6.0 Session State May Be Lost If You Use Web Gardens with ASP Applications* in the Microsoft Knowledge Base at [http://support.microsoft.com/kb/822171\\_](http://support.microsoft.com/kb/822171_)

# APPENDIX B: IMPLEMENTATION CHECKLIST

Activities	Owner	Due Date	Date Completed	Result / Answer
<b>SYSTEM</b>				
<b>General</b>				
Regional Options				
Any slogan or message to use as the Banner?				
<b>Database</b>				
Set up Company (system checklist/verification)				
Does your company report or transact in multiple currencies? Specify currencies				
What countries does your company have employees? Specify countries				
How is your company divided for reporting purposes? Specify divisions				
What are the cost center/P&L reporting levels? Specify cost centers				
<b>Security</b>				
Will the current list of roles satisfy the functional needs of the organization?				
Do additional roles need to be created for workflow? Roles (can create additional roles and add, delete, show users of roles)				
Delegation				
Function Rights				
<b>HRM</b>				
<b>References</b>				
Job Group (has standard list)				
Job Activities (has standard list)				
Job Title (has extensive list with default security level associated)				

Activities	Owner	Due Date	Date Completed	Result / Answer
Active Countries (need to activate necessary countries)				
Locations (create list of office locations; this needs to be done after the countries have been activated)				
<b>Organization</b>				
Does your company have an updated organization chart?				
Does your company have updated Job Descriptions for all levels of the organization chart?				

Activities	Owner	Due Date	Date Completed	Result / Answer
<b>People</b>				
How many employees will be using the system?				
Do you require former employees to be entered in the system? If so, how many?				
Can these records be loaded manually?				
<ul style="list-style-type: none"> <li>• Name</li> </ul>				
<ul style="list-style-type: none"> <li>• User Name</li> </ul>				
<ul style="list-style-type: none"> <li>• Country</li> </ul>				
<ul style="list-style-type: none"> <li>• Job Title</li> </ul>				
<ul style="list-style-type: none"> <li>• Cost Center</li> </ul>				
<ul style="list-style-type: none"> <li>• Division</li> </ul>				
<ul style="list-style-type: none"> <li>• Manager</li> </ul>				
<ul style="list-style-type: none"> <li>• Security Level (if different from standard)</li> </ul>				
<ul style="list-style-type: none"> <li>• Additional item fields</li> </ul>				
<ul style="list-style-type: none"> <li>• Address</li> </ul>				
<ul style="list-style-type: none"> <li>• E-mail Address</li> </ul>				
<ul style="list-style-type: none"> <li>• Phone</li> </ul>				
<ul style="list-style-type: none"> <li>• Start Date</li> </ul>				
<ul style="list-style-type: none"> <li>• Birthday/Anniversary</li> </ul>				
<ul style="list-style-type: none"> <li>• Digital Picture (can only be added after the personal card has been saved)</li> </ul>				
<b>Schedules</b>				
At what level does your company establish work schedule/holiday schedule? (not immediate required information)				
<ul style="list-style-type: none"> <li>• Public Holidays</li> </ul>				
<ul style="list-style-type: none"> <li>• Schedules (shifts, days, et cetera)</li> </ul>				
<ul style="list-style-type: none"> <li>• Division or individual schedules</li> </ul>				
<b>DOCUMENTS</b>				
Where are the documents stored? (file cab/server/desktops)				
What historical information is required?				

Activities	Owner	Due Date	Date Completed	Result / Answer
How is knowledge capital currently shared across your organization?				
What Taxonomy fits your business? (organizational/functional/ other)				
What documents are created out of business processes?				
<b>Document Types</b>				
Do level and/or role dictate who can see certain document based information?				
Access by Role				
Required Fields				
Default Security Level				



Activities	Owner	Due Date	Date Completed	Result / Answer
<b>Miscellaneous</b>				
Main Category (choose appropriate property - No (Not in use, Yes (Optional), Yes (Mandatory))				
<ul style="list-style-type: none"> <li>• Items</li> <li>• Assortments</li> <li>• People</li> <li>• Account</li> <li>• Language</li> <li>• Division</li> <li>• Project Transaction</li> </ul>				
Category				
Subcategory				
Review Settings				
Layouts (Normal, FrontPage, Document, et cetera)				
Pictures				
<b>WORKFLOW</b>				
What processes should be included in <b>Exact Synergy Enterprise</b> ?				
At what timeframe should they be included?				
Are the processes documented? (flow diagrams)				
<b>How should requests be categorized? (function or process)</b>				
Request Categories				
Group similar requests?				
Request Types				
Do requests require the creation of additional roles for routing?				
Define workflow				
Entry Fields				
Required Fields				
Default Security Level				

Activities	Owner	Due Date	Date Completed	Result / Answer
<b>CUSTOMERS</b>				
Where are your company's lead, prospect, and customer information maintained?				
What system(s) are currently in place? What processes?				
What is your Business model? (direct to customer, reseller, hybrid)				
Who is(are) the Business Owner(s) of this process?				
<b>General</b>				
Who will perform the data cleaning?				
Titles (salutation)				
Address Types				
Free fields (5 date, 5 text, 5 number, 5 Yes/No fields)				

Activities	Owner	Due Date	Date Completed	Result / Answer
<b>Other</b>				
How will account codes be generated - manual or systematic?				
Are your account codes numeric or alphanumeric?				
Does your company plan to use form letters/documents and e-mails?				
<ul style="list-style-type: none"> <li>• Settings</li> </ul>				
<ul style="list-style-type: none"> <li>• Mail Merge</li> </ul>				
<ul style="list-style-type: none"> <li>• Account code increment</li> </ul>				
<ul style="list-style-type: none"> <li>• Server settings for customers</li> </ul>				
<b>MARKETING</b>				
Who is the Business Owner of the Marketing processes?				
What are the logical categories to divide your customer base for directed marketing and sales efforts?				
Sectors (example: Manufacturing, Agriculture, et cetera)				
Code (unique id)				
Description				
Sub sectors				
Sizes (example: 0-99, 100-499, et cetera)				
Classifications				
Source (example: Phone, Magazine, Web site, et cetera)				
<b>Rating: Rule</b>				
Customers				
Resellers				
<b>Portal</b>				
Are you planning Web access for your employees?				
Are you planning Web access for your customer base?				
Are you planning Web access for your reseller/distributor base?				
Are you planning Web access for your supplier base?				
Employee: Page - support				
Customer: Page - support				

Activities	Owner	Due Date	Date Completed	Result / Answer
Reseller: Page - support				
Supplier: Page - support				
<b>LOGISTICS</b>				
What system owns Items?				
How many Items exist?				
Who owns the Item creation process?				
Are catalogs used to provide targeted offerings?				
<b>Activities</b>				
Who owns the determination of Catalogs?				
<b>Items</b>				
Assortments/Assortment Properties				
New Items				
<b>Catalogs</b>				
New Catalogs				
Assign Items to Catalogs				
<b>PROJECTS</b>				
What projects should be entered into Exact Synergy Enterprise?				
Projects				
<ul style="list-style-type: none"> <li>• Free Fields</li> </ul>				
<ul style="list-style-type: none"> <li>• Settings</li> </ul>				
How are Projects currently tracked - Financial/Progress?				
What criteria should be used to establish a project?				
Who owns Projects?				
<b>FINANCIAL</b>				
G/L Accounts				
<ul style="list-style-type: none"> <li>• Chart of G/L's</li> </ul>				
<ul style="list-style-type: none"> <li>• Categories</li> </ul>				
Budgets				
<ul style="list-style-type: none"> <li>• Scenarios</li> </ul>				

Activities	Owner	Due Date	Date Completed	Result / Answer
<ul style="list-style-type: none"> <li>• Entries</li> </ul>				
Who owns Financial?				
<b>DATA CONVERSIONS</b>				
<b>Human Resources</b>				
Data Cleanup				
Manual/Systematic Upload				
Number of Data Sources				
<b>Accounts: Customer, Prospect, Lead, and Supplier</b>				
Data Cleanup				
Manual/Systematic Upload				
Number of Data Sources				
<b>Items</b>				
Data Cleanup				
Manual/Systematic Upload				
Number of Data Sources				

Activities	Owner	Due Date	Date Completed	Result / Answer
<b>TRAINING</b>				
<b>Human Resources</b>				
Number of End Users/Locations				
<b>Customers</b>				
Number of End Users/Locations				
<b>Workflow</b>				
Number of End Users/Locations				
<b>Documents</b>				
Number of End Users/Locations				
<b>Projects</b>				
Number of End Users/Locations				
<b>Financial</b>				
Number of End Users/Locations				
<b>Logistics</b>				
Number of End Users/Locations				

# APPENDIX C: EXACT SYNERGY ENTERPRISE FIELD TERMS

These are field terms that will need to be defined. The following examples explain how Exact has chosen to define and use them.

## Customers

Term	Description
Transaction	Financial transactions to link to.
Assortment	Product (Exact Globe Next, Exact Synergy Enterprise).
Rating	Graphical way to report the number of the accounts that are assigned a certain rating based on the license value.
Active	The account is linked to a contract, service items are linked to the contract.
Blocked	The account is not allowed to receive any type of service or delivery. Can be a result of having outstanding amounts that are too high or long overdue.
Exit	The associate is not interested in one of the products or services.
Passive	The account is linked to a contract. No service items are linked to the contract.
Pilot	The account participates in a pilot project.
Reference	The customer has a testimonial linked and can be used for commercial purposes.
Not Validated	An account that is entered via web request; manual check of every record is required.
Associate	An account that does not sell your product and therefore is partnered in other areas like development, hardware, et cetera.
Bank	An account that provides financial services to you.
Division	An account that is your company or is a part of your organization.
Prospect	An account that is interested in one of your products.
Reseller	An account that sells your products/dealer.
Supplier	An account that provides goods or services to you.

## Logistics

Term	Description
Assortments	Used to group the same kind of items together. Every item can only belong to one assortment. So the assortment should be unique for every individual item. There is no maximum to the amount of assortments used inside one company.
Item release	Version numbers of the items. This functionality is particularly useful if you are required to maintain different versions of your items. Releases are linked to assortments.
Items	Items are the basic objects in <b>Logistics</b> . Items are grouped according to assortments so you need to create assortments first before creating items.
Item Relation	You can create a parent and child relationship between items. A sub-assembly item can be linked as a child item to an end product item. The relationship between the sub-assembly item and the end product item can be defined with the item relation type. For example, when you define the relationship between the sub-assembly item and the end product as mandatory, this means that the sub-assembly item is always required when you select the end product.
Status	<p>Determines what relation type that you wish to use. Use any of the status to determine the relationship between two items. There are 9 types of status you can define, namely <b>Default</b>, <b>Mandatory</b>, <b>Mandatory (one of set)</b>, <b>Mandatory (at least one)</b>, <b>Optional</b>, <b>Optional (one of set)</b>, <b>Replacement</b>, <b>Trade in</b>, and <b>Invalid</b>.</p> <p>For example, an end product is made of two components and these two components are compulsory parts to make the end product. As such, the relationship between the end product and the components are mandatory. You can configure this relationship between them with the relation type defined here.</p>



# APPENDIX D: EXACT SYNERGY ENTERPRISE DATABASE TABLES

Exact Synergy Enterprise is very strong in storing data in a structured way and with a little bit of creativity virtually every important piece of information in any organizational process can be stored. In order to generate relevant information based on this information, several reporting functionalities are available in Exact Synergy Enterprise. For every module, a sub-menu, **Reports** which discloses a variety of reporting functionalities can be found. The most powerful report is the **Pivot analysis**, while the **Search** reports and more specific reports are also very useful.

Despite all the reporting functionalities, information is sometimes desired in a format that cannot be provided with standard Exact Synergy Enterprise. In these cases, third party reporting tools can be addressed to fulfill the need, as explained in these few examples:

- SQL Reporting services is a powerful web based reporting tool that can be used under the SQL Server license and integrates perfectly in the Exact Synergy Enterprise environment.
- MS Access via ODBC connection with the database views, can be build.
- MS Excel uses the powerful **Pivot** functionality to create multi-level reports and upload the generated reports right back into Exact Synergy Enterprise using the Exact Synergy Enterprise **Office Add-in** Exact Synergy Enterprise SDK, and then builds the desired reports fully integrated in the Exact Synergy Enterprise GUI.
- Crystal Reports.

Since the Exact Synergy Enterprise database is an open SQL database, any tool that can retrieve information out of the Microsoft SQL database can be used to create customized reports. In order to create adequate reports, some knowledge about the tables and the purposes for which they are used is necessary. This document describes the most commonly used tables and explains how entities are referenced using the relevant key.

**Caution:**

Do not write information directly into the tables. Exact Synergy Enterprise uses a validation layer to make sure all data entered into the database are correct and writing directly into the database could mess up the integrity of the data.

## General

In virtually every table in Exact Synergy Enterprise, one will find references to people and divisions. The reference to people in particular, will be found multiple times in the form of capturing the ID of the creator, modifier, or owner of the entity. The column names differ between the different tables. The following list shows the most commonly used columns:

Entity	Column
Creator	syscreator, createdby, creator
Modifier	sysmodifier, modifiiedbby, modifier
Owner	res_id, resid, cmp_acc_man, owner, Responsible, Ownerperson, empid, emp_id, Humresid

Also, the division is stored in almost every Exact Synergy Enterprise table and again the column names used to store the division can vary, as displayed in these few examples:

- division
- company
- companycode
- administration
- comp
- divisioncode

Every click in Exact Synergy Enterprise is logged in the table **BacoApplog**. This log is used to show who read, created, modified data, and when this was done. For example, the log for documents that have been read fetches its information from this table.

- **BacoApplog** — Stores information of every click people make.
- **EbcDataLog** — Stores changes made in records. What is logged can be specified in Exact Synergy Enterprise via Modules → System → Setup → Settings - Database → Log: Data.
- **BacoProcessLog** — Stores information about the activity of the background jobs.
- **BacoErrorlog** — Stores errors occurring in Exact Synergy Enterprise.

## HRM

The main identity of the **HRM** module is the people captured in the system. Virtually all other modules have references to people in one way or another. The reference used in both the tables and visually in the graphical interface is the id which can be found on top of a personal card. The table in which the people are stored is called **HUMRES**, and this table contains people, vacancies, applicants, and contact persons from resellers that are granted web access. The other tables containing **HRM** metadata mostly start with **HR...**

Characteristics	Values
Main table	<b>HUMRES</b>
Reference key	res_id (integer)
Reference user interface	ID
Meta data tables	Mostly start with <b>HR...</b>

## Customers

The **Customers** module stores its main entity; the relation in the table **Cicmpy**. Most tables storing metadata for the **Customers** module start with **Ci...** However, a few important exceptions can be found like the table **Addresses** that stores address information per contact person or account and the tables **DivisionDebtors** and **DivisionCreditors** that store debtor and creditor information per division.

It is important to know that when writing reports that involve information about relations, in almost all cases, the **cmp\_wwn** column is used to refer to an account except for the financial table **GbkMut**. This table uses the **debnr** or **crdnr** column as a reference to accounts, and in consolidated scenarios this means joining the **DivisionDebtors** and **DivisionCreditors** table with the Debtor and Creditor fields.

Characteristics	Values
Main table	<b>Cicmpy</b>
Reference key	cmp_wwn (GUID)
Reference user interface	Account code
Metadata tables	Mostly start with <b>Ci...</b>

## Documents

The **Documents** module stores its records for documents in the table **BacoDiscussions**. These documents are referenced by people via the document number. However, in the tables, a GUID is used as reference. The tables containing metadata for the **Documents** module mostly start with **BacoDiscussions....**

Characteristics	Values
Main table	<b>BacoDiscussions</b>
Reference key	ID (GUID)
Reference user interface	Document number (HID)
Metadata tables	Mostly start with <b>BacoDiscussion...</b>

Documents can be linked to several other entities using the key for that entity, as displayed in these few examples:

Entity	Column	Link to table
People	HumResID	<b>Humres</b>
Account	CmpWwn	<b>Cicmpy</b>
Item	ItemCode	<b>Items</b>
Project	ProjectNr	<b>PRProject</b>

## Workflow

The **Workflow** module stores its main entity request in the table **Absences**. The table stores a readable number in the column **HID** that is also shown in the user interface as the request number. Technically, a GUID is stored in the column **ID** to reference this entity. Tables related to the **Workflow** module either start with **Absence...** or **Request...** A few examples of tables are explained in the following:

- **RequestTasks** — All requests that are displayed in the workflows of people are stored in this table.
- **AbsenceTypes** — The definition of the different request types are stored here.
- **RequestFieldOptions** — All fields that can be added to a request type definition are stored here.

Requests can be linked to a variety of other entities. These references are stored in the table **Absences**.

Characteristics	Values
Main table	<b>Absences</b>
Reference key	ID (GUID)
Reference user interface	Request number (HID)
Metadata tables	Start with <b>BacoDiscussion...</b> or <b>Request...</b>

The following table shows how the most commonly used references are stored:

Entity	Column	Link to table
Person	HumResID	<b>Humres</b>
Account	CustomerID	<b>Cicmpy</b>
Contact person	CustomerContactID	<b>Cicntp</b>
Item	ItemCode	<b>Items</b>
Project	ProjectNumber	<b>PRProject</b>
Document	DocumentID	<b>BacoDiscussions</b>

## Logistics

The **Logistics** module stores its main entity in the table **Items** using the reference **itemcode** both in the user interface as well as in the tables. All other tables directly linked to items start with **Item....** A few examples of item tables are:

- **ItemCountries** — Stores item information per country. Every item has at least one record in this table for the **World** item.
- **ItemDivisions** — Only used in the consolidated scenario, items, and their general ledger accounts are stored per division and the XML exchange procedure looks at this table to determine which items to upload or download.

Characteristics	Values
Main table	<b>Items</b>
Reference key	ItemCode
Reference user interface	ItemCode
Metadata tables	Start with <b>Item</b>

## Projects

The **Projects** module stores its main entity in the table **PrProject** using the column **ProjectNr** as a reference in both the user interface as well as the tables. Other tables related to this module start with either **Pr...** or **Project....**

Characteristics	Values
Main table	<b>PrProject</b>
Reference key	ProjectNr
Reference user interface	ProjectNr
Metadata tables	Start with <b>Pr...</b> or <b>Project...</b>

## Financial

The main financial table is **Gbkmut**, and this table uses the column **Transactionguid** to reference to records in the tables. From the user interface, there can be several ways to look at financial transactions. These include perspectives from the customers, suppliers, and the employees. Item, project, general ledger, and transaction types are also angles used to look at financial transactions. Other tables related to the **Financial** module start mostly with **Account...** but tables like **Bedryf**, **Valuta**, and **bdgvers** are also related to financial data.

Characteristics	Values
Main table	<b>Gbkmut</b>
Reference key	Transactionguid
Reference user interface	Bkstrn
Metadata tables	Start with <b>Account...</b>

Financial entries can be linked to a variety of other entities resulting in the possibility to view transactions from all the angles described earlier. A list with how other entities are linked to the financial table can be viewed in the following:

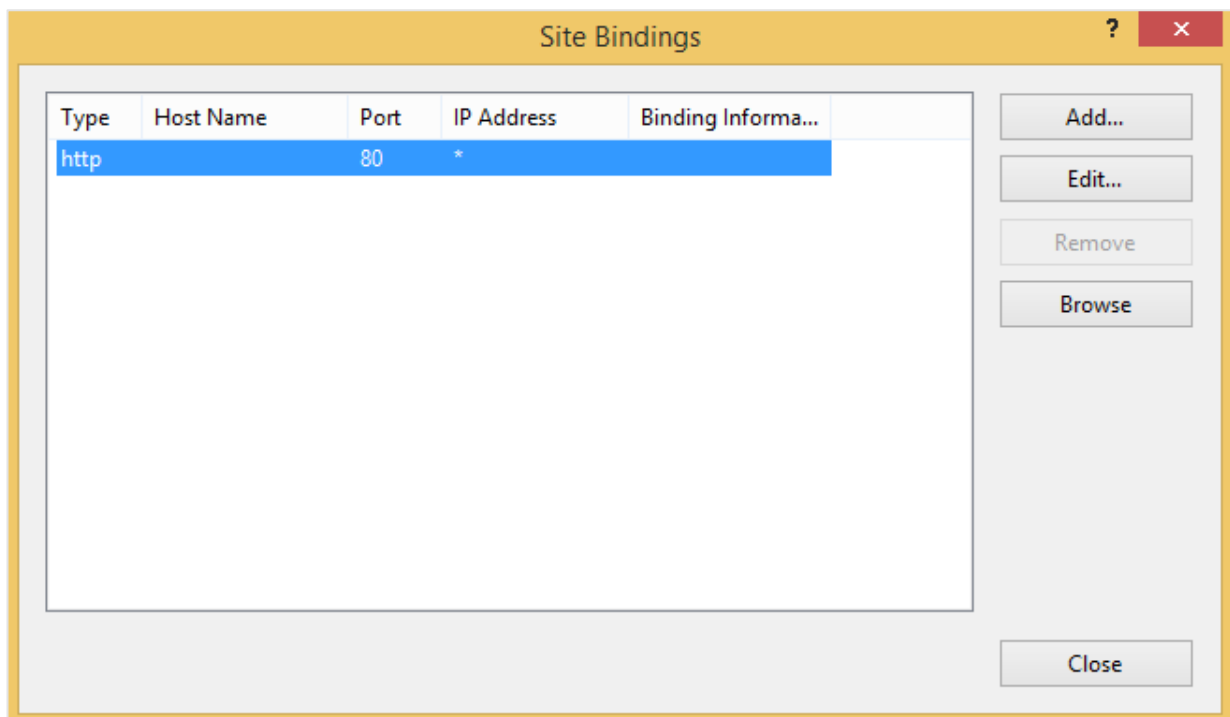
Entity	Column	Link to table
Person	res_id	<b>Humres</b>
Account	cmp_wwn	<b>Cicmpy</b>
Item	artcode	<b>Items</b>
Project	project	<b>PRProject</b>
Document	DocumentID	<b>BacoDiscussions</b>
G/L account	reknr	<b>Grtbk</b>
Debtor	debnr and debtor	<b>Cicmpy and DivisionDebtors</b>
Creditor	crdnr and creditor	<b>Cicmpy and DivisionCreditors</b>

# APPENDIX E: USING HOST HEADER NAMES TO CONFIGURE MULTIPLE WEB SITES

Microsoft Internet Information Services (IIS) allows you to map multiple web sites with the same port number to a single IP address by using a feature called Host Header Names. By assigning a unique host header name to each web site, this feature allows you to map more than one web site to an IP address. This section provides step-by-step instructions for hosting multiple web sites by using a single Internet Protocol (IP) address.

## To configure websites by using the Host Header Names feature:

1. Go to Start → Control Panel → Administrative Tools → Internet Information Services (IIS) Manager.
2. In the left pane, expand the server node, expand **Sites**, and select the required web sites to configure the host header name.
3. In the **Actions** pane, under **Edit Site** section, click **Bindings**.
4. On the **Site Bindings** screen, select the required binding, and then click **Edit**.



5. At **Host name**, type a host header for the site, for example, “”.

6. Type the port number at **Port**, and then select the IP address from the **IP address** list.

The screenshot shows the 'Edit Site Binding' dialog box with the following configuration:

- Type:** http
- IP address:** All Unassigned
- Port:** 80
- Host name:** www.dbike.com
- Example:** www.contoso.com or marketing.contoso.com

7. Click **OK**.

**Note:**

To configure this web site with additional identities, click **Add**. Use the same **IP address** and **Port**, but define a unique host header name for each identity, and then click **OK**. For example, if you want to access the same web site from both the Internet and a local intranet, you could configure the web site identity in the manner shown in the following example:

IP Address	TCP Port	Host Header Name
192.168.0.100	80	www.dbike.com
192.168.0.100	80	dbike.com

Register the host header names with the appropriate name resolution system, for example, a Domain Name System (DNS) server or, in the case of a small network, a Hosts file. The web sites are now configured to accept incoming Web requests, based on their host header names.

Do not assign a host header name to the default web site. Many programs expect the default web site to use an IP address of (**All Unassigned**), Port **80**, and no host header name.

## Troubleshooting

### Clients using the IP address are unable to connect to the web sites

Since there is more than one web site configured to the IP address, you must use host header names to connect to the web sites. When you attempt to connect to the web sites using the IP address, you will receive the following error messages:

- The page cannot be found.
- The page you are looking for might have been removed, had its name changed, or is temporarily unavailable.



**Clients using host header names are unable to connect to the web sites**

Multiple host header names must be mapped to the single IP address via a DNS server or a Hosts file.

# APPENDIX F: CONFIGURATION SQL SERVERS

1. Keep all software patches up to date. Software patches provide solutions to known security issues. Check software provider web sites periodically to see if there are new patches available for software used in your organization.
  - Auto Update version 1.0 provides three options to customers: notify patch availability the moment it is available, download patch, and notify that it has been downloaded, and scheduled for installation. For more information, see *Windows Automatic Updates* in Windows Help.
2. Disable all unnecessary services.
3. Change the default empty password of the System administrator of the SQL Server (SA).
4. Check the SQL logins for people or groups that do not need direct access to the SQL Server via an SQL login.
5. Remove other applications software and development tools from the servers if these have been installed.
6. Use NTFS. The NTFS file system is more secure than the FAT or FAT32 file system.

# APPENDIX G: CONFIGURATION OF THE IIS

1. Keep all software patches up to date. Software patches provide solutions to known security issues. Check software provider web sites periodically to see if there are new patches available for software used in your organization.
  - The new process model beginning in IIS 6.0 includes process recycling, which means an administrator can easily install most IIS patches and most new worker process DLLs without any interruption of service.
  - Auto Update version 1.0 provides three options to customers: notify patch availability the moment it is available, download patch, and notify that it has been downloaded, and scheduled for installation. For more information, see *Windows Automatic Updates* in Windows Help.
2. Disable all unnecessary services.
3. Install Exact Synergy Enterprise on an NTFS partition.
4. Properties of the virtual directory for internal users on the internal IIS servers:
  - Disable anonymous authentication.
  - Enable **Basic Authentication** if employees must be validated through a firewall via a proxy server.
  - Enable **Integrated Windows Authentication** to validate employees.
  - Define read rights (no write, script source access, directory browsing).
  - Execute permissions: Scripts Only.
  - Application Protection: Medium (Pooled) or High (Isolated).
5. Properties of the virtual directory for external users on the external IIS servers:
  - Enable anonymous authentication for all public users.
  - Enable **Basic Authentication** if resellers and customers must be validated through a firewall via proxy server.
  - Enable **Integrated Windows Authentication** to validate resellers and customers.
  - Define read rights (no write, script source access, directory browsing).
  - Execute permissions: Scripts Only.
  - Application Protection: Medium (Pooled) or High (Isolated).
6. Define read-only access to the Exact Synergy Enterprise directory for all users. Only system administrators have full control and can do an installation, update, and batch to batch conversion of Exact Synergy Enterprise.

7. Disable or remove all sample applications. Samples are just samples; they should never be installed on a production server.

**Note:**

Some samples are installed so that they can be accessed only from `http://localhost`, or `127.0.0.1`. However, they should still be removed. For example:

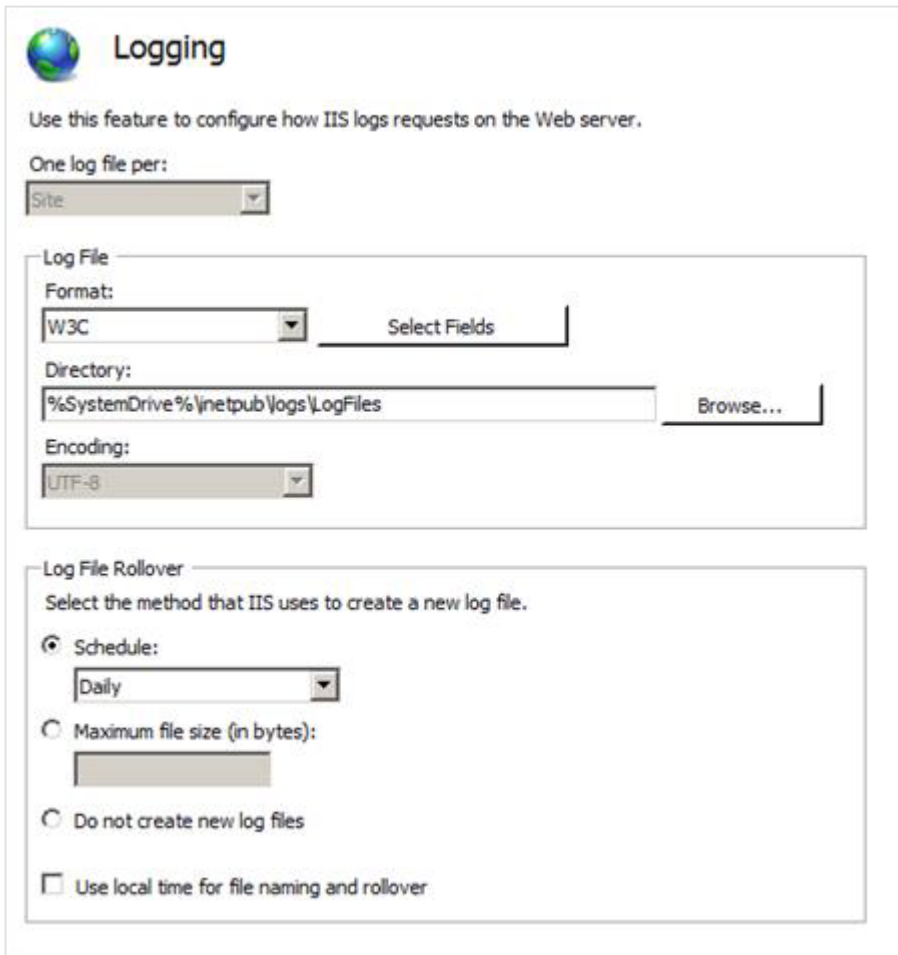
<b>Sample</b>	<b>Column</b>	<b>Link to table</b>
IIS Samples	\IISamples	c:\inetpub\iissamples
IIS Documentation	\IISHELP	c:\winnt\help\iishelp
Data Access	\MSADC	c:\program files\common files\system\msadc

8. Install Exact Synergy Enterprise on a member server so no copy of the directory database of the domain is available on the server. Only local accounts are available.
9. Remove other applications software and development tools from the servers if these have been installed.

## Enable logging

Logging is paramount when you want to determine whether your server is being attacked. You should use W3C Extended Logging format by following this procedure:

1. Go to Start → Administrative Tools → Internet Information Services (IIS) Manager.
2. In the left pane, expand the server node, expand **Sites**, and select the required web sites to enable logging.
3. Under the **Log File** section, select **W3C** at **Format**, and then click **Select Fields**.



The screenshot shows the 'Logging' configuration page in IIS Manager. It includes a globe icon and the title 'Logging'. Below the title is a descriptive sentence: 'Use this feature to configure how IIS logs requests on the Web server.' There are three main sections: 'One log file per:', 'Log File', and 'Log File Rollover'. The 'One log file per:' section has a dropdown menu set to 'Site'. The 'Log File' section contains a 'Format' dropdown set to 'W3C' with a 'Select Fields' button, a 'Directory' text box containing '%SystemDrive%\inetpub\logs\LogFiles' and a 'Browse...' button, and an 'Encoding' dropdown set to 'UTF-8'. The 'Log File Rollover' section has a sub-heading 'Select the method that IIS uses to create a new log file.' and three radio button options: 'Schedule:' (selected) with a 'Daily' dropdown, 'Maximum file size (in bytes):' with an empty text box, and 'Do not create new log files'. There is also an unchecked checkbox for 'Use local time for file naming and rollover'.

**Logging**

Use this feature to configure how IIS logs requests on the Web server.

One log file per:  
Site

**Log File**

Format:  
W3C [Select Fields](#)

Directory:  
%SystemDrive%\inetpub\logs\LogFiles [Browse...](#)

Encoding:  
UTF-8

**Log File Rollover**

Select the method that IIS uses to create a new log file.

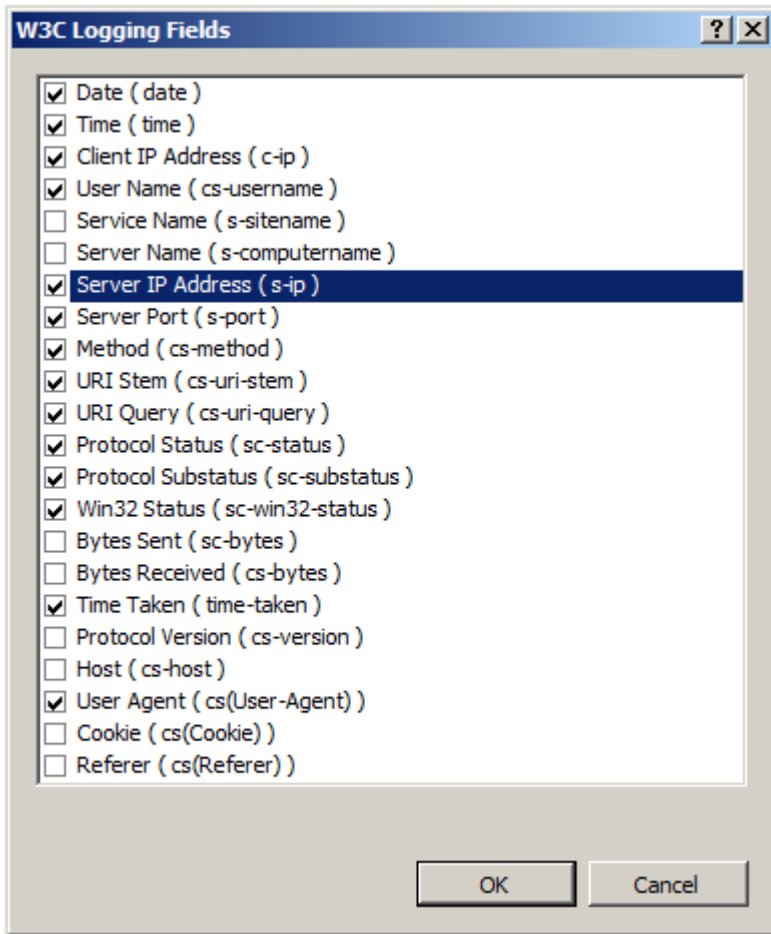
**Schedule:**  
Daily

**Maximum file size (in bytes):**  
[Empty text box]

**Do not create new log files**

**Use local time for file naming and rollover**

4. The **W3C Logging Fields** list will be displayed. Select the check boxes as follows:



The **Server IP Address** and **Server Port** properties are useful only if you host multiple web servers on a single computer. The **Win32 Status** property is useful for debugging purposes. When you examine the log, look out for error “5”, which means “access denied”. You can find out what other Win32 errors mean by entering `net helpmsg err` on the command line, where `err` is the error number you are interested in.

### Set appropriate IIS log file access control lists (ACL)

Make sure the ACLs on the IIS-generated log files (%SystemDrive%\inetpub\logs\LogFiles) are:

- Administrators (Full Control)
- System (Full Control)
- Everyone (RWC)

This is to help prevent malicious users from deleting the files to cover their tracks.

# APPENDIX H: CONFIGURATION OF EXACT SYNERGY ENTERPRISE SERVERS

1. Define all your IIS servers in the Server access application. The current Exact Synergy Enterprise database can only be accessed by the Exact Synergy Enterprise application from these IIS servers. Otherwise, you can connect to the Exact Synergy Enterprise SQL Server database using another Exact Synergy Enterprise environment. To define all your IIS servers in the Server access application, start Exact Synergy Enterprise as a user who has the **Administrator** role with level corporate. Select HRM, administrative tools, server access. Add all IIS servers. When no IIS servers are defined in the server access application, no check will be done on the IIS server that you use to connect to the Exact Synergy Enterprise database.
2. Check if the SQL login “Baco” has no additional server roles or database access rights. This SQL login is created to connect to the SQL Server. All necessary rights in the database are supplied by the application role “Baco” which is part of the database.

## Services needed to run IIS and MS SQL Servers

- Event Log
- IIS Admin Service
- License Logging Service
- MSDTC
- Protected Storage
- Remote Procedure Call (RPC) Service
- Server
- Windows NT Server
- Windows NTLM Security Support Provider
- Workstation
- World Wide Web Publishing Service
- MS SQL Server
- SQL Server Agent

## Services that may be needed on the servers

- Certificate Authority — Required to issue certificates.
- Content Index — Required if using Index Server.
- FTP Publishing Service — Required if using FTP service. It is highly recommended that FTP and Web services run on different servers.
- NNTP Service — Required if using NNTP Service.
- Plug and Play — Recommended but not required.
- Remote Access Services — Required if you use dial-up access.
- RPC Locator — Required if doing remote administration.
- Server Service — Can be disabled but required to run User Manager.
- SMTP Service — Required if using SMTP Service.
- Telephony Service — Required if access is by dial-up connection.
- Uninterruptible Power Supply (UPS) —Optional but it is recommended that you use a UPS.
- Workstation — Optional but important if you have UNC virtual roots.

## Services mostly not needed on servers

- Alerter
- ClipBook Server
- Computer Browser
- DHCP Client
- Messenger
- NetBIOS Interface
- Net Logon
- Network DDE
- Network DDE DSDM
- Network Monitor Agent
- NWLink NetBIOS
- NWLink IPX/SPX Compatible Transport (not required if unless you do not have TCP/IP or another transport)
- Simple TCP/IP Services
- Spooler
- TCP/IP NetBIOS Helper
- WINS Client (TCP/IP)

It is possible that you may need services, such as WINS and DHCP. This depends on your network environment. For a complete list of needed services, see <http://msdn.microsoft.com>.



# APPENDIX I: CONVERSION AND MIGRATION OF DATABASES TO UNICODE AND STANDARD MODE DOCUMENT TYPE STRUCTURE

With this release, there are changes in the database structure for Exact Synergy Enterprise. As such, it is possible that you may need to convert and migrate existing databases in order to fully utilize the available functions.

The logical and pre-requisite steps for conversion and migration of an existing database are as follows:

1. Update Exact Synergy Enterprise to the current release.
2. Convert the database so that it is Unicode-compliant.
3. Migrate the database so that it supports the **Standard** mode document type structure.

**Note:**

The above steps are for Exact Synergy Enterprise only. For more information on installing Exact Synergy Enterprise and its pre-requisites, see *Exact Synergy Enterprise: Installation Manual (Doc ID: 14.139.246)*.

## Database migration to Unicode-compliant databases

With this release, you can convert your existing databases to be Unicode-compliant. New databases created in this release are already Unicode-compliant. To ensure that your database can be supported across different countries that use different sets of languages, it has to comply with the Unicode standard. This will allow different languages, especially characters that do not have English as a basis, such as Arabic and Chinese, to be presented over the internet effectively.

The basic conversion process in converting an existing database to ensure it is Unicode-compliant is targeted at databases that will not take an excessive processing time. This process will include converting the database structure and the language coding of documents.

**Note:**

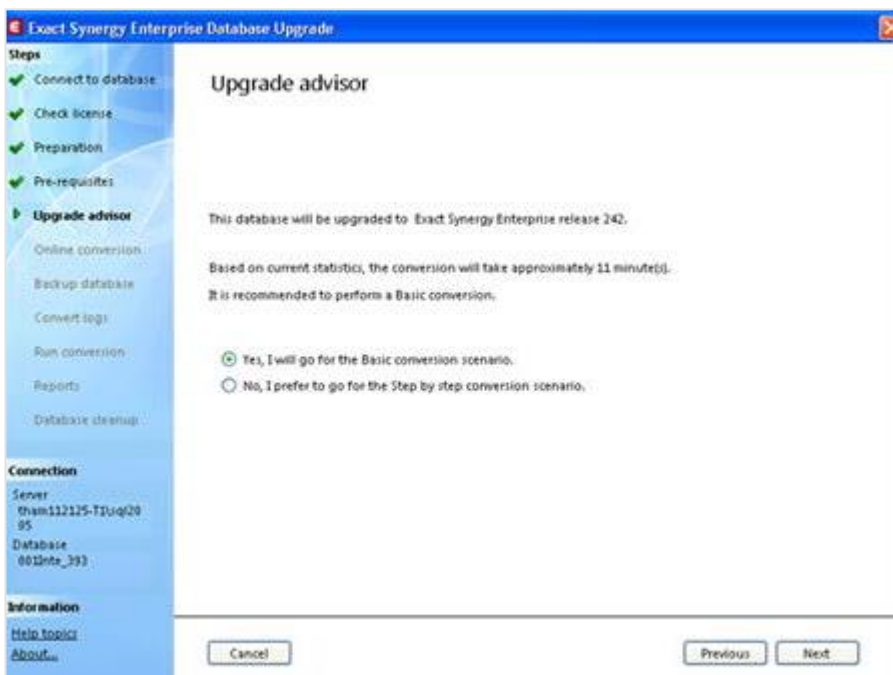
You can perform this step only if you have updated Exact Synergy Enterprise to the current release.

**To migrate to Unicode-compliant database using basic conversion process:**

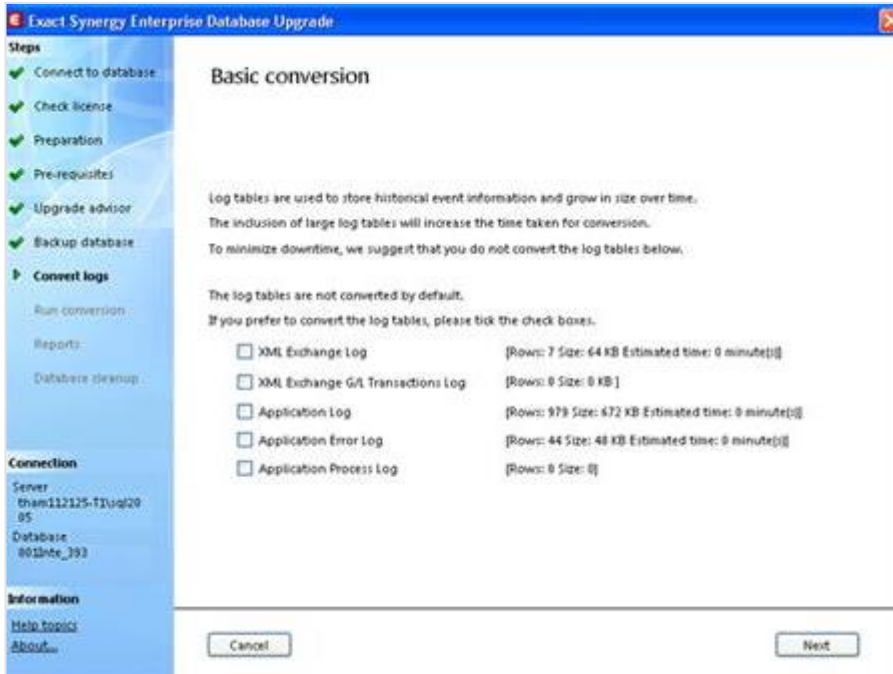
1. In Windows, click **Start** followed by **Run**. Type **<Exact\_Synergy\_installation\_folder>bin\ESEDbUpgrade.exe** at **Open** and click **OK**. You will see the following page:



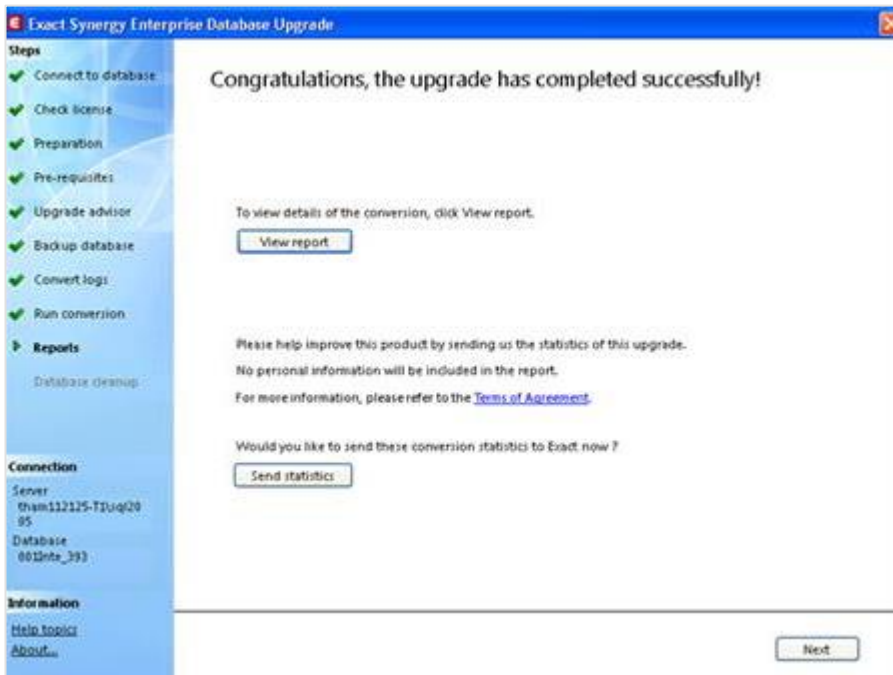
2. Type the server name at **Server**. Next, select the database that you want to convert at **Database**. By default, <your full computer name minus the domain name\database instance> will be filled in at **Server**.
3. Click **Connect** to connect to the selected database.
4. Then, click **Next**.
5. Click **Next** again to begin the prerequisite checks.
6. If all the prerequisites have been met in step 4, click **Next**. You will then see the following page:



7. Select the option for basic conversion scenario, and then click **Next**.
8. You will then be asked to make a backup of your database. Once completed, select the **I have made a backup of database [<Database name>]** check box, and then click **Next**. The following page will be displayed:



9. Select the relevant check boxes to convert the selected tables or leave the check boxes blank, and then click **Next** to begin the conversion process.
10. Once the conversion is completed, click **Done**. You will see the following page:



11. You can opt to view the conversion log by clicking **View report**. To send the performance statistics gathered during the conversion process to Exact, click **Send statistics**.
12. Finally, click **Finish**.

## Database conversion and migration to document structure

With this release, your existing database will fully support the document type structure. However, in order to provide for backward compatibility, the document category structure is still available as a reference basis unless the migration process is carried out.

The document type and category structures are used by Exact Synergy Enterprise to manage your documents. The document category structure arranges your documents in a hierarchical structure while the document type structure arranges your documents in a logical structure.

In the move towards providing a more business-like approach to storing documents, Exact Synergy Enterprise provides more emphasis on the document type structure in storing documents. With regard to a business process flow, a document type is more relevant than document categories. For example, if you are planning to write a proposal for a project, you need only click on the “Proposal” document type.

Once your organization is comfortable with the document type structure, you can opt to migrate the database from the **Classic** to **Standard** mode permanently. This will totally remove the category structure from the system and users will only be presented with document types when managing documents.

The steps taken in a typical conversion and migration process are as follows:

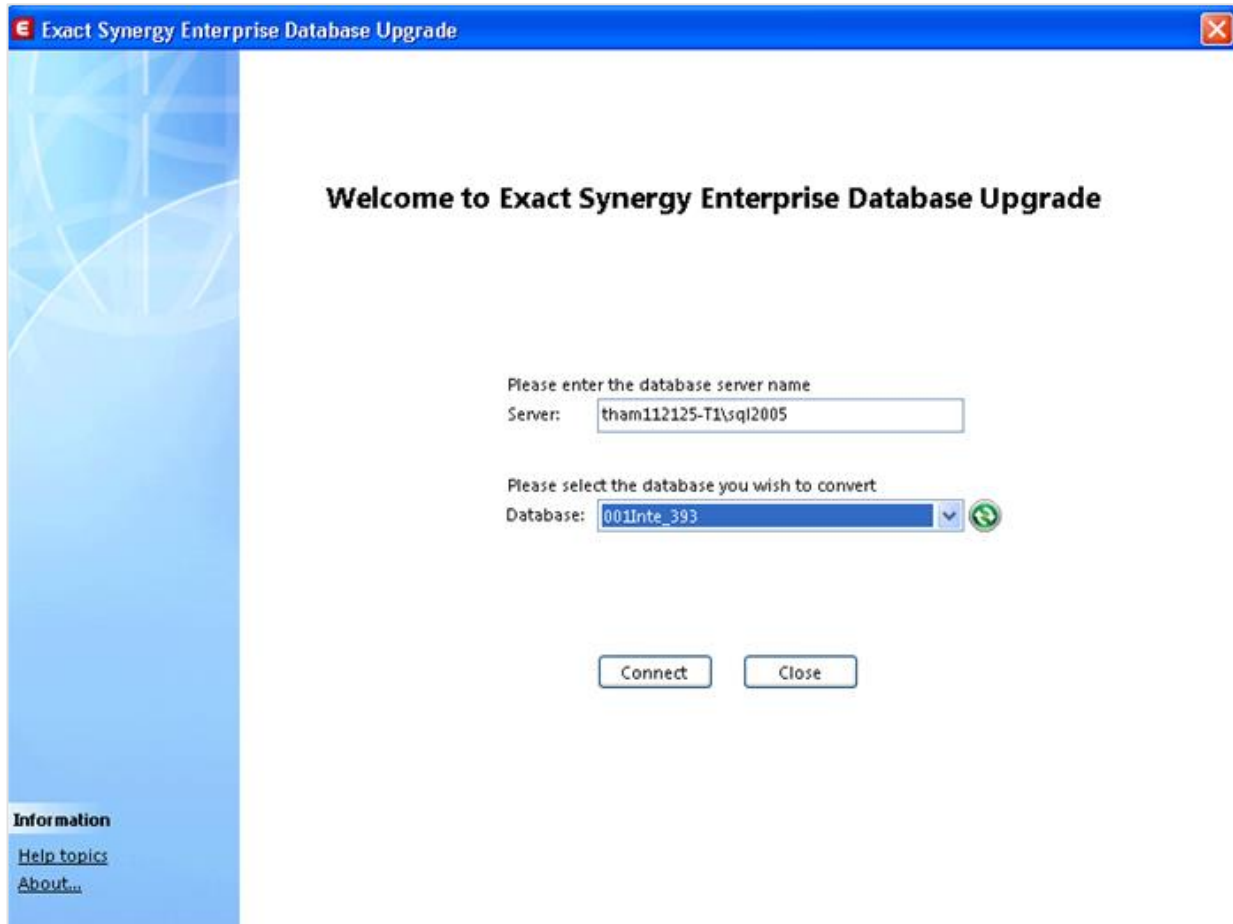
1. The conversion process takes place when you update to this release. The system will convert existing databases to prepare for the document type structure support. You will start using this release in the **Classic** mode whereby you can still access document categories.
2. Existing main categories, categories, and subcategories will be converted into document types.
3. Converted document types are unavailable for use until the administrator enables them.
4. The migration process can take place any time by using the migration tool. This will change the **Classic** mode database structure to the **Standard** mode where only document types are available for use. Once the document structure is in the **Standard** mode, you cannot migrate back to the **Classic** mode.

**Note:**

You can perform this step only if you have updated Exact Synergy Enterprise to the current release and the database is Unicode-compliant.

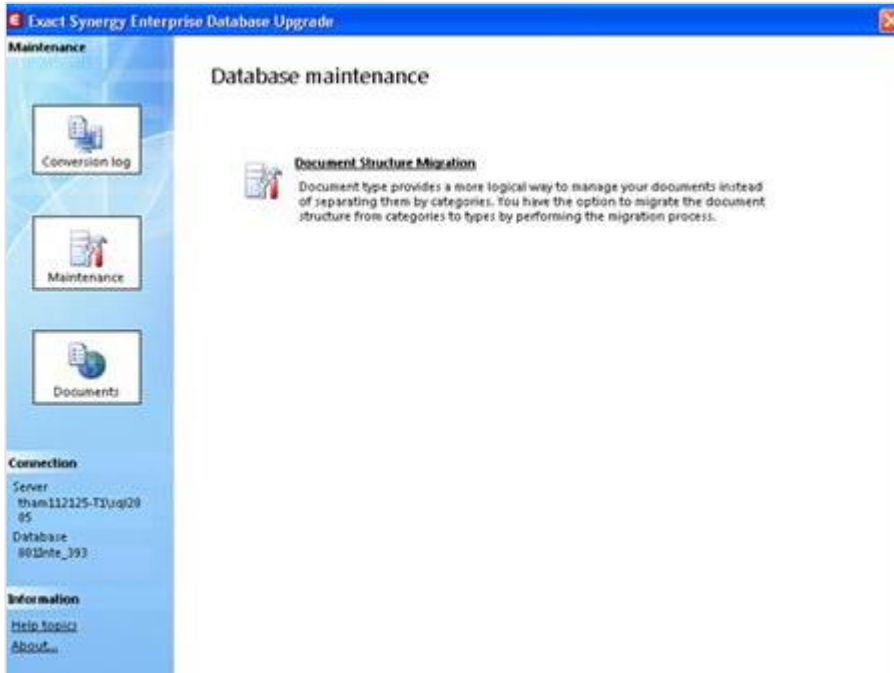
**To migrate databases from Classic to Standard mode permanently:**

1. In Windows, click **Start** followed by **Run**. Type `<Exact_Synergy_installation_folder>\bin\ESEDbUpgrade.exe` at **Open** and click **OK**. You will see the following page:

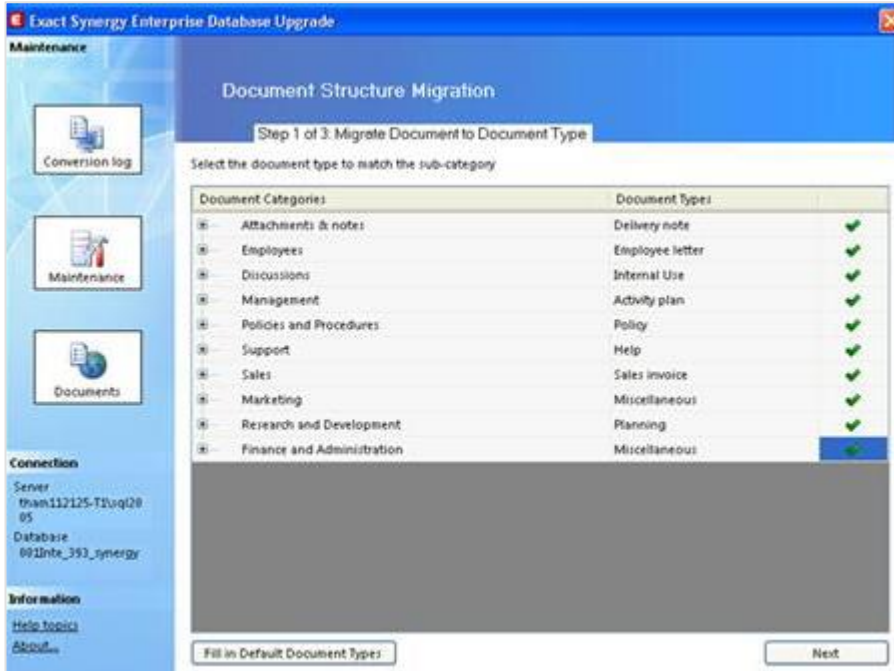



2. Type the server name at **Server**. Next, select the database that you want to convert at **Database**. By default, `<your full computer name minus the domain name\database instance>` will be filled in at **Server**.

- Click **Connect** to connect to the selected database. You will see the following page if the connection is successful:





- Click **Document Structure Migration**. A message will be displayed to ask if you want to continue. Click **Yes** to continue with the migration process. You will see the following page:

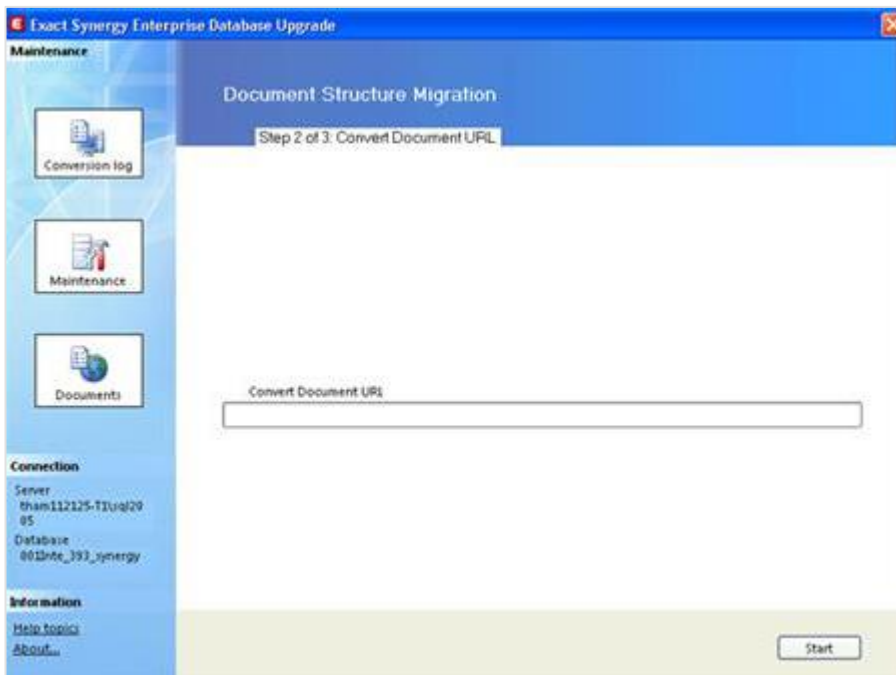


- Click  , and then select the document type for the respective category/subcategory. A message “Set all categories/subcategories under <document category selected> to document type “\*<document type selected>?” will be displayed. Click **OK** to automatically fill in the selected document type for all the subcategories of the selected document category. To select other document types for the subcategories, click **Cancel**.

**Note:**

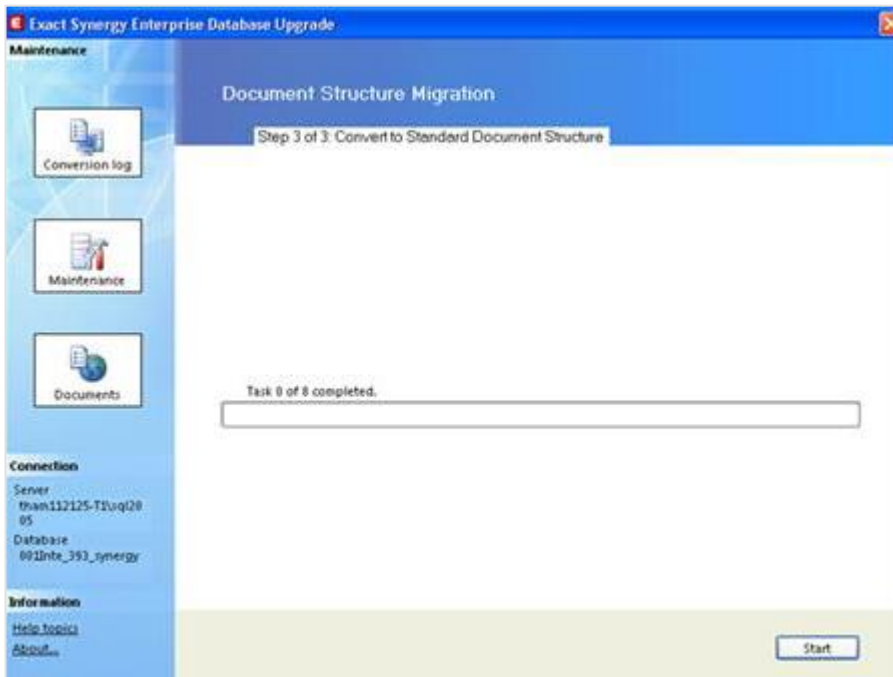
You can also map a document subcategory with a document type straightaway (without mapping its category) by clicking  to display the subcategories, and then clicking  to select the document type. It is not necessary to map the document subcategories to document types all at once before the migration starts. However, you must map all the document subcategories before you can begin step 2 of 3, **Convert Document URL**.

- Once you have mapped the document categories or subcategories to the required document types, click **Start Migration** to begin the mapping process.
- After all the document subcategories have been mapped to document types, click **Next** to display the following page:



- Click **Start** to begin the document URL conversion.

9. When the document URL conversion has completed, click **Next** to display the following page:



10. Click **Start** to fully convert to the document type structure.

11. Once completed, click **Next**, and then click **Finish**.



# APPENDIX J: DOCUMENT CATEGORIES

## Creating document categories

If you are using the **Classic** document structure mode (**Classic** is selected at the **Document** structure field at Modules → Documents → Setup → Maintenance → Settings), document categories must be defined before documents can be created.

With the three levels of document categories, the speed of retrieving documents from the database is greatly improved. In addition, the categories provide a better structured document management system.

To create and maintain the main categories, function right **237 - Maintain main categories, categories, and subcategories** is required. Users with the **Documents administrator** role have this function right.

### To create main categories for documents:

1. Go to Modules → Documents → Setup → Maintenance → Main categories/Categories/Subcategories, and then click **New**. You will see the following page:

The screenshot shows a web form titled "Documents: Main category". At the top right of the form are three icons: a close button (X), a star, and a help button (?). Below the title bar are three buttons: "X Close", "Save", and "Save + New". The main content area is titled "Main categories" and has a "General" section. Under "General", there is an "ID" field with the value "205" and a "Description" field which is empty and has a yellow warning triangle icon next to it.

2. Under the **General** section at **ID**, type a unique ID for the main category. By default, the next available number is filled in. You can change the ID if required.
3. Type a description for the main category at **Description**.
4. Click **Save** to save the new main category.





### Note:

All fields with the "!" icon are mandatory.

**To create categories for documents:**

1. Follow steps 1 to 4 at *To create main categories for documents*. Alternatively, if you want to create a category under an existing main category, go to Modules → Documents → Setup → Maintenance → Main categories/Categories/Subcategories, select a main category, and then click **Add** under the **Categories** section.

## Documents: Category







X Close
Save
Save + New

[Main categories](#) > [Attachments & notes](#)

### General

Main category Attachments & notes

Category  

2. At **Category**, type a description for the new category.
3. Click **Save** to save the new category.

**Note:**

All fields with the “!” icon are mandatory.

**Tip:**

Once you have clicked **Save** to save a new category, you can create a subcategory on the **Documents: Subcategory** page.

**To create subcategories for documents:**

1. Follow steps 1 to 3 at *To create categories for documents*. Alternatively, if you want to create a subcategory under an existing category, go to Modules → Documents → Setup → Maintenance → Main categories/Categories/Subcategories, select a category, and then click **Add** under the **Subcategories** section.

Documents: Subcategory

[Close](#) [Save](#) [Save + New](#)

Main categories > Attachments & notes > Attachments

**General**

Main category Attachments & notes  
Category Attachments  
Subcategory  ⚠  
Document type  🔍 ⚠

**Forum**

Security level Internal   
Type  Customer  Reseller  Employee

Description

2. At **Subcategory** under the **General** section, type a description for the new subcategory.
3. At **Document type**, type or select a default document type to be used when creating documents for this subcategory.
4. At **Security level** under the **Forum** section, type or select a security level to allow document creators with the same or higher security level to create a document in this subcategory.

**Note:**  
The security level defined here affects both readers and writers of this subcategory. For instance, if a subcategory is set at security level “10”, only users of security level “10” and above can read and create documents in this subcategory.

- At **Type**, select the required check box(es) to place the subcategory in the corresponding forum(s). For instance, if the **Customer** check box is selected, the subcategory will be placed in the **Customer** forum whereby only customers and any user with security level “1” or higher can access it.

**Note:**

The selected option will automatically change the security level accordingly. If more than one option is selected, the value at the **Security level** field will be changed to the lowest value. For instance, if both the **Reseller** and **Employee** check boxes are selected, the **Security level** field will be changed to “2”. However, if you have the correct subcategory maintenance rights, the security level can still be changed as required.

- At **Description**, type a description for the forum which describes about the forum.
- Click **Save** to save the new subcategory.

**Note:**

All fields with the “!” icon are mandatory.

# APPENDIX K: PRODUCT UPDATE CHANGES

Product Update	Chapter
250	All chapters
251	4.3.1
252	2.1.1, 2.1.2, 5.2.1, 7.4.1
253	2.1.1, 2.1.2, 7.3, 7.4.1, 7.7.1
254	2.1.1, 2.1.2, 2.4.2, 2.5.2, 2.5.3, 2.5.4, 2.6.2, 6, 7.3, 7.9.1, 7.9.7
255	All chapters
257	2.1.1, 2.1.2, 4.6.1, 7.3.1, 7.3.2
258	2.1.1, 2.1.2, 2.4.2, 2.5.4, 2.6.2, 2.6.4, 3.1.1, 3.1.2, 3.3.4, 3.3.5, 3.3.6, 4.1, 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5, 4.1.6, 4.1.7, 4.1.8, 4.1.9, 4.1.10, 4.1.13, 4.1.14, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.4.1, 4.4.2, 4.4.8, 4.6.2, 4.6.3, 4.7, 4.7.1, 4.7.2, 4.7.5, 4.7.6, 5.2.1, 5.2.7, 5.2.12, 7.1.1, 7.1.2, 7.8.4, Appendix E, Appendix J
259	2.1.1, 2.1.2, 2.5
260	2.1.1, 2.1.2, 5.1.3, 5.2.1, 5.2.12, 5.2.13, 7.3, 7.4.1, 7.4.3, 7.8.1
261	2.1.1, 2.1.2, 2.2, 2.4.2, 2.5.1, 2.6.1, 2.6.2, 2.6.3, 2.7.2, 2.7.3, 2.7.4, 2.7.5, 2.7.6, 3.1.1, 3.1.2, 7.1.1, 7.3, 7.8.1
262	2.1.1, 2.1.2, 2.3.3, 7.3.2
263	2.1.1
264	2.1.1
266	2.1.1
267	2.1.1, 2.1.2, 7.3
500	2.1.1, 2.1.2
501	2.1, 2.6.1, 3.1.1, 3.1.2, 3.2.1, 3.2.3
502	2.1.1, 2.1.2

