

CMG Installation Preparation Guide

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Introduction

Collaboration Management (CMG) is a collaboration and presence management suite enabling business users to manage their day-to-day communication.

The CMG suite includes the CMG Web component, enabling users to manage their activities. With the CMG Web site, users can perform “smart-search” directory services, use click-to-dial, set activity timeline and manage call-routing preferences based on the calendar/activities.

Integration with the BluStar Server (BSS) enables users to see, in real-time, their colleagues’ rich presence information, including BluStar user presence status, calendar activity and line state from all available sources provided by the BluStar Server.

Mitel Installer is the tool used for installing and upgrading CMG. The installation and upgrade is performed from a wizard or the classic package browser and is further described in the documents CMG Installation Guide [3] and CMG Configuration Guide [4].

This document describes the actions to complete before installing CMG.

Requirements Overview

This chapter outlines the prerequisites for installing CMG.

It is assumed that the person installing the CMG system is an experienced system administrator or network administrator who knows how to install, configure, and manage Windows™ servers as well as the call manager (also called PBX in this document).

Prerequisites

NOTE: IPv6 is not supported in this version of CMG and must be disabled.

The following software prerequisites must be satisfied before installing CMG:

- Administrator rights are needed on the server where the software is installed.
- Microsoft SQL Server 2012/2012 R2/2016/2019 must be installed on the server.
For more information, refer to chapter 6.
- Enable Internet Information Services (IIS) 6 Management Compatibility, ASP.NET and ASP.NET 3.5 and ASP. For more information, refer to chapter 5.2.
- You must disable the **Use FIPS compliant cryptographic algorithms** policy. To disable and verify this policy perform the following steps:
 - a. Go to, **Administrative Tools > Local Security Policy > Local Policies > Security Options**.
 - b. Select **System cryptography: Use FIPS compliant cryptographic algorithms, including encryption, hashing and signing algorithms** policy.
 - c. Right-click the selected policy and select **Properties**. Set the value as **DISABLED**, click **Apply** and the click **OK**.
 - d. Start **regedit** and right-click and select **Run as administrator**. Verify that the change is stored in the registry as indicated below and ensure that this registry sub key is set to **0:HKEY_LOCAL_MACHINE \ SYSTEM \ CurrentControlSet \ Control \ Lsa \ fipsalgorithm-policy**
 - e. Restart the server.

NOTE: This instruction is valid to ALL installations of CMG, InAttend and Virtual Reception regardless of PBX platform.

- A PDF reader must be installed for reading the CMG documentation.

For software compatibility and hardware requirements, see CMG Compatibility Matrix [7] available on InfoChannel.

Antivirus Software

The following trace folders should be excluded from local virus scanning due to performance issues:

- If Attendant Server Services are installed on the same server as CMG Server: <path>\nicesrv
- For BluStar Server: <path>\BluStar Server
- For Calendar Connection (if installed): <path>\Calendar Connection

Component Requirements

The following general requirements must be fulfilled for CMG.

- Enterprise License Manager (ELM) must be installed in the network. For more information, refer to section 4.3.
- Microsoft .NET Framework 4.7.2 must be installed on the Windows Server. For installation info, refer to CMG Installation Guide [3].
- Internet Information Services (IIS) 6 Management Compatibility.

The table lists the requirements that are specific to some of the CMG applications. The software can be installed from the Mitel Installer.

Application	Specific requirement
Enterprise LicenseManager (ELM)	Microsoft IIS 6 Management Compatibility enabled for Windows Server. See chapter 5.2 for further information. A license file must be available.
CMG Web	Microsoft .NET Framework 4.7.2.
CMG Web Service	Microsoft Internet Information Services (IIS). In addition to the default values, ASP.NET and ASP has to be activated for IIS Roles.
Calendar Connection	Oracle Java SE Development Kit 7 or 8 (i586) also on 64-bit OS. Office Web components.
BluStar Server (BSS)	Oracle Java SE Development Kit 7 or 8 (x64). Microsoft .NET Framework 3.5. Microsoft .NET Framework 4.7.2. Microsoft Internet Information Services (IIS).
Corporate Directory for IP Phone (MX-ONE)	Internet Information Server (IIS) with ASP.NET must be enabled. IIS 7 must be configured for IIS 6 Metabase Compatibility. Microsoft .NET Framework 3.5. CMG Web Service Interface (CWI) must be installed on the CMG Server.
IP Phone Services for Cisco	Office Web components.

* This is an optional application installed from the classic package browser so the requirements are not applicable when installing from a wizard.

CMG Server in a VMware ESX Environment

The CMG Server has been tested and is supported for VMware ESX/ESXi.

The system requirements for running the CMG Server apply also to a virtual machine, in the means of required operating system, hard disk space, additional supportive software.

For software compatibility and hardware requirements, see CMG Compatibility Matrix [7] available on InfoChannel.

For further information on how to prepare CMG Server to run in a VMware ESX/ESXi environment, see chapter 6.

VMware Limitations

- Although VMware HA (High Availability) is fully supported, it does not guarantee seamless operation of the CMG Server in case of failure of the primary host server. Should the primary VMware host server fail, presence status will be lost. Once the CMG Server restarts on the secondary VMware host, normal operation will be restored.
- VMware Fault Tolerance (FT) is not supported with the CMG Server.

Firewall Ports

The following ports are used in CMG and should be considered for firewall configuration.

It is important to open these ports, if a hardware/software firewall is used.

port	Server(created by)	Client(used by)	description
25	SMTP		Simple Mail Transfer Protocol
80	Web applications	Web-based administration tools	Used by the web based administration tools to connect to a web application.
80	Calendar Connection	Exchange Server 2003	
389	LDAP Server	CMG Web Service InAttend client Directory Server	Used for caller identification or directory searches.
443	Calendar Connection and IMAP	Exchange Server 2007/2010/2013	
1352	Calendar Connection	Lotus Notes Client	
1433	MS SQL Server	DAL Server BluStar Server Administration	Used to store configuration data.
2580	Enterprise License Manager	BluStar License Manager	Used to retrieve information about available licenses and reserve/release licenses.
5050	Presence Server	InAttend Webadmin	Socket connection
5051	Calendar Connection	Calendar Connection	Used for line state and presence integration as well as calendar integration with MS Exchange server, Lotus Notes or GroupWise
5062	Presence Server	CMG Web Service	Used for line state and presence integration as well as calendar integration with MS Exchange server.
5071	DAL Server	BluStar Server InAttend client	Data Access Layer for the BluStar Server and InAttend client. Interface for the SQL Database, used by InAttend to read configuration. InAttend also uses DAL Server to save call information and read call information history.
5077	BluStar Server	Presence Server	Used for line state information via NeMex.

port	Server(created by)	Client(used by)	description
5199	NiceSrv	InAttend client	Used by CMG Server to give access to the nice database to all clients communicating using the RDS interface.
6001	CMG Server	Call Manager	For PBXSTD process.
7191	Calendar Connection	Novell GroupWise Server (SOAP)	
8002	CMG Web Service	InAttend client	Used for presence information.
8080	BluStar Server	Presence Notification service	Used to get notifications from MS Exchange server (Apache web server).
63148	Calendar Connection	Lotus Notes Server (DIIOP)	

License Handling

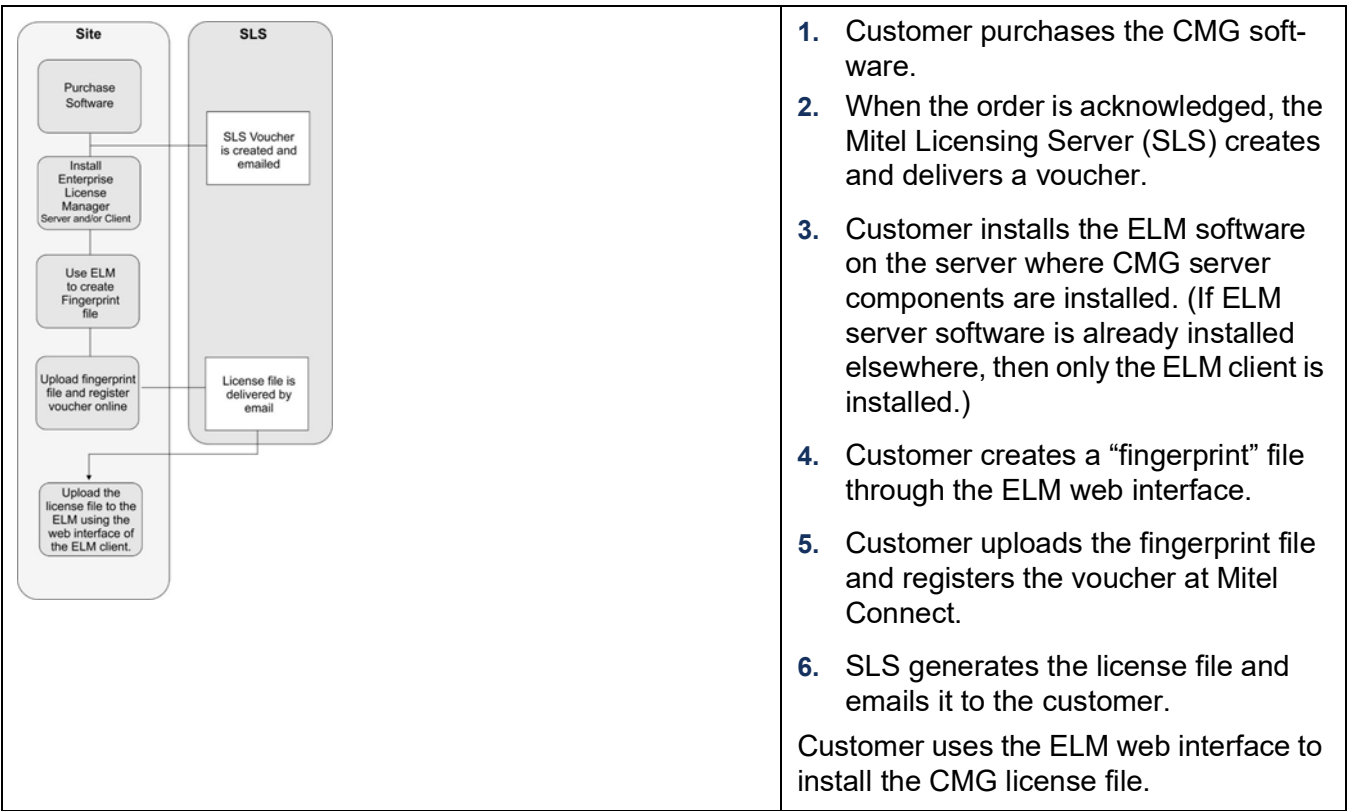
Enterprise License Manager (ELM) is the application that controls the licenses for CMG. The ELM installation and license file handling is further described in document CMG Installation Guide [3].

For detailed information on ELM, please refer to Enterprise License Manager Technical Guide [6].

Order and Information Flow

Since licenses are non-physical products there is no physical delivery.

The process for ordering CMG licenses is as follows:



CMG Licenses

The license file is downloaded from the License Administration Web interface and installed in Enterprise License Manager (ELM), which controls the licenses for CMG.

BluStar License Manager periodically communicates with ELM to determine if the license information has changed. If this is the case, BluStar License Manager updates the internal license information within the CMG Server database, seen in CMG CM. The periodic interval is 5 minutes.

These are the licenses for CMG:

- **CMG system license**- for the whole CMG system.
This license is connected to the version of CMG Server.
- **API (CWI) system license** - for application programmers to interact with CMG Server (e.g. to integrate with a 3rd party system).
- **User license** - to allow usage for a given amount of users according to the customer needs. A user is allowed usage when defined in a CMG directory or when the privilege to use the CMG Web application has been given to the user, even if the user is not connected at the moment.
- **Additional directory entries** - used to extend the directory with extra searchable items (external numbers to taxis, hotels etc.)

For a complete list of available feature licenses and mapping between system and feature licenses, please refer to the ordering information.

CMG Trial License

The CMG software package includes a trial license. The trial license is for training purposes only, and has the following limitations:

- Supports a maximum of five CMG Web users (not concurrent users, the users must be pointed out in Directory Manager).
- Supports a maximum of 20 directory entries.
- Valid for 30 days.

Enterprise License Manager Installation

Enterprise License Manager (ELM) controls the licenses for CMG. The ELM client is automatically installed with **CMG** and the server is installed separately. For more information about the installation procedure, refer to CMG Quick Installation Guide [2] or CMG Installation Guide [3].

For ELM to run on Windows Server, IIS 6 compatibility must be setup on the web server. This is done during the Windows Server installation, described in section 5.2.

License File Handling

When a product is ordered, a voucher is generated in SLS. As soon as the voucher is registered (activated), a license file is created and delivered by e-mail.

This section provides an overview of how to generate a license file in the License and Services (SLS) application and how to install it in ELM.

SLS Access

You must have access to use the SLS application and to generate and download license files. Access rights must be set up for:

- Application Access
- License Manager access

Generate License File

To generate the license file, do the following:

1. Log on to **Mitel Connect** and then click on **Licenses and Services** in the sidebar.
2. In the **Register voucher** field, enter the voucher number and click **Register voucher**.
3. If you have another voucher, add the voucher number in the **Voucher** field in the next window and click **Add voucher**. When finished, click **Next**.
4. In the next window, upload the file `fingerprint.blob` in **Enter fingerprint**. When finished, click **Next**.
5. In the next window, check the **System data and Ownership** information details. You will also see the see all the licenses from the Voucher you are registering, as well as the accumulated number of licenses. Click **Confirm input**.
6. If everything is OK, click **Confirm and Generate License Key**. The license is now generated and e-mailed to you.

Install License File

Install the new license file in ELM. For more information about how to install the license file, follow the steps in Enterprise License Manager Technical Guide [6].

NOTE: The product version displayed in CMG CM application under Site Configuration-> All Licenses, gets updated only with the respective version licenses installed and fail to work with the previous installed version licenses.

Microsoft Windows Server Installation

This section describes the installation and configuration of Microsoft Windows Server required for CMG. For software compatibility and hardware requirements see CMG Compatibility Matrix [7] available on Info-Channel.

Install

To install Microsoft Windows Server, do the following:

1. Install Windows Server as a standalone server or as a member of the domain.
NOTE: Do not install as a domain controller.
2. Name server something that is unique over the installation base, for example:
CMGSELECTA, CMGNASSJO etc.
NOTE: Avoid using the underscore character.
3. Make sure **User Account Control (UAC)** is disabled.
4. Set **Language for non-Unicode programs** to English:
 - a. Control Panel -> Clock, Language, and Region -> Region and Language.
 - b. In the Administrative Tab, set "Language for non-Unicode programs" to English.

ADD ROLE SERVICES

Microsoft Windows Server 2012 and 2012 R2

To configure server roles, do the following:

1. In the **Control Panel**, navigate to **Administrative Tools**, and then **Server Manager**.
2. In the left navigation panel, click on **Next** before beginning Wizard and select **Installation type as Role-Based or feature-based Installation**, and click **Next**.
3. In the **Select Server Roles** window, select the following roles and click **Next**.
 - Application Server
 - Web Server (IIS)
4. In **Features**, select the following features and click **Next**.
 - .Net Framework 3.5 Features
 - .Net Framework 3.5 (include .Net 2.0 and 3.0)
 - Windows Process Activation Service
 - Process Model
 - Configuration APIs

NOTE: Windows Process Activation Service (Automatically selected as part of .Net Framework 3.5 Features).

5. In **Application Server – Role Services**, select the following services and click **Next**.

- .Net Framework 4.7.2
- TCP Port Sharing
- Web Service IIS Support
- Windows Process Activation service support
 - Named Pipes Activation
 - TCP Activation

NOTE: Include all sub role services.

6. In **Web Service (IIS) – Role Services**, select the following services and click **Next**.

- Common HTTP Features
- Health and Diagnostics
- Performance
- Security
- Application Development
 - ASP.NET
 - ASP.NET 3.5
 - ASP

- IIS Hostable Web Core
- Management Tools

NOTE: Include all sub role services.

7. In **Confirmation**, specify an alternate source path in **Path**, click **Ok**, and finally **Install**.

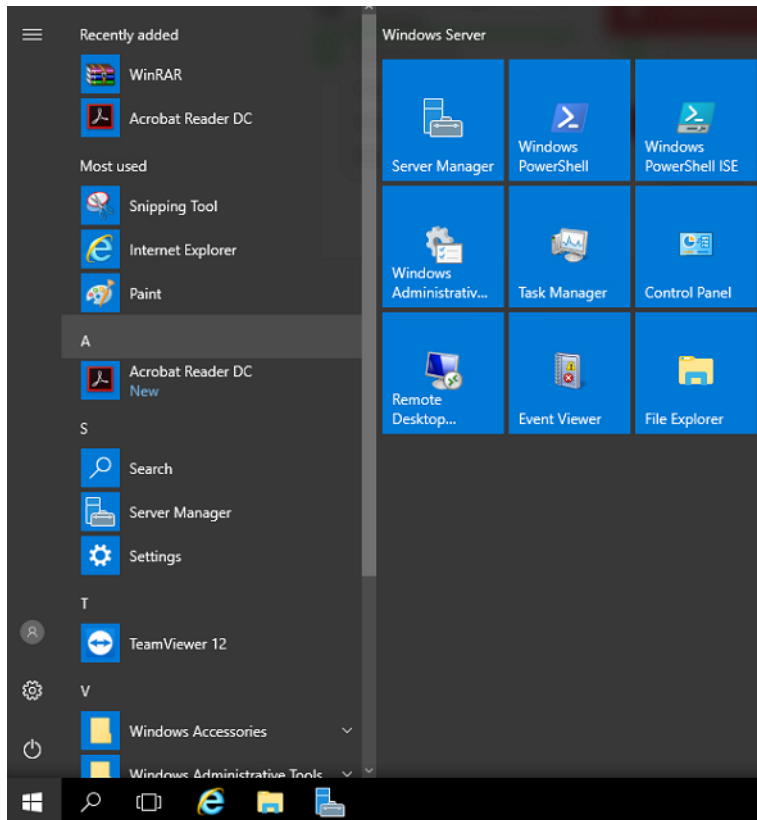
8. **Configure IIS** (Internet Information Services). Do the following:

- a. Open **IIS Manager** and select **Default Web Site**.
- b. Verify that **Session State** is set to **In process**.
- c. In the IIS section, open ASP and set **Enable Parent Paths** to **True**.

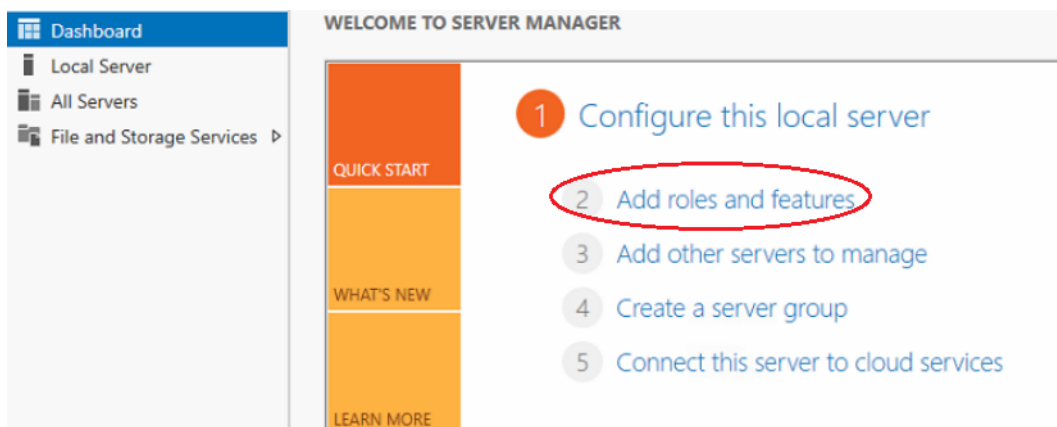
MICROSOFT WINDOWS SERVER 2016 and 2019

To configure **Server Roles**, do the following:

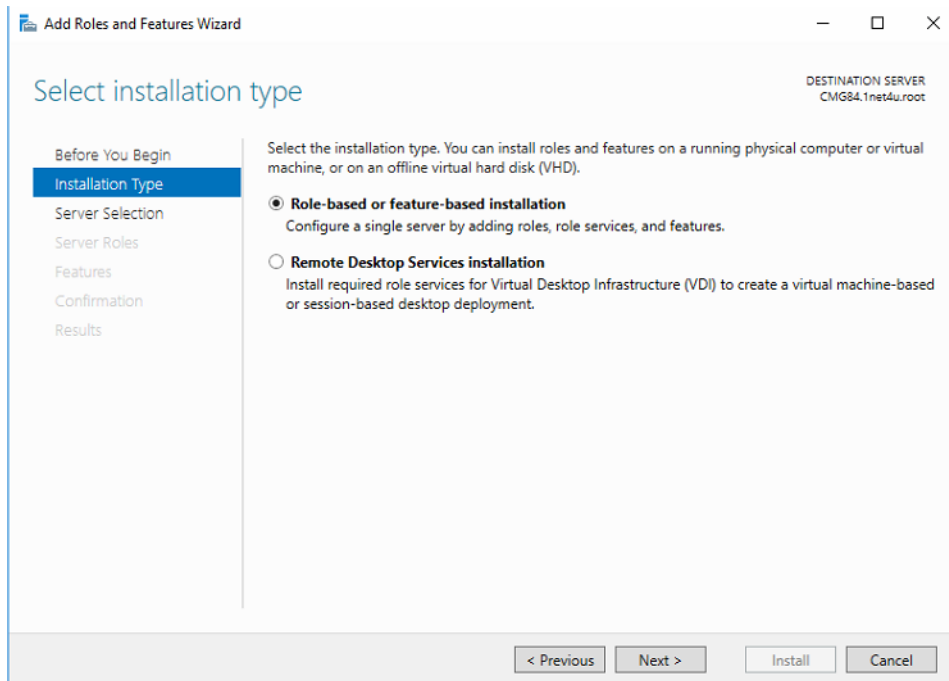
1. Click the **Windows Start** menu.
2. Click the **Server Manager** application that turns up in the right part of the screen as shown below.



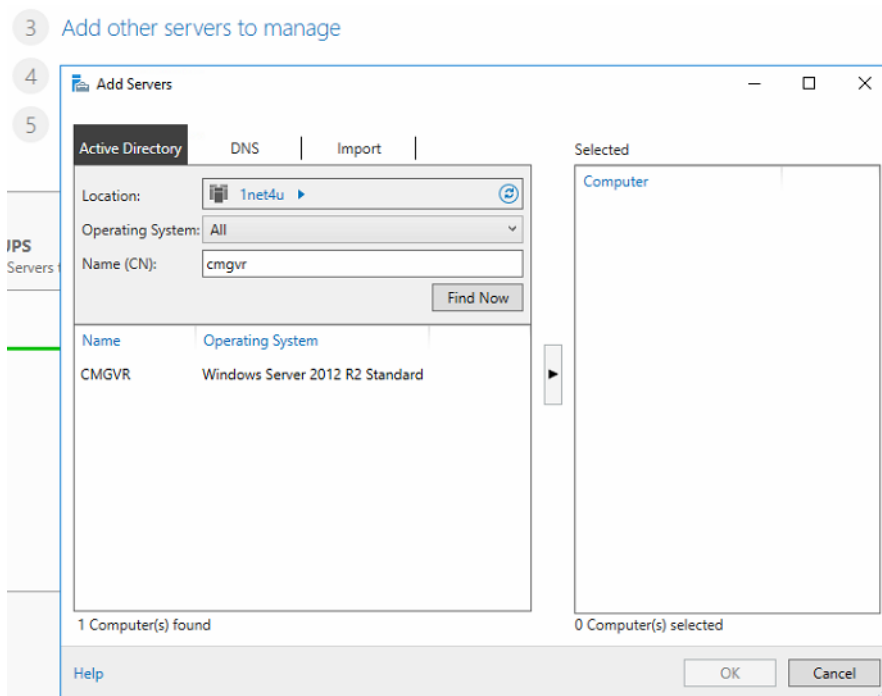
3. Click **Dashboard**. The following figure displays to view the **Add roles and features** in the **WELCOME TO SERVER MANAGER** screen.



4. Click **Add roles and features** to start the **Add Roles and Features Wizard**. Click **Next** before Wizard starts.
5. Click **Next** in the **Before you begin** screen appears.
6. Select **Installation type** as **Role-based or feature-based Installation**, and click **Next** as displayed in the following screen.



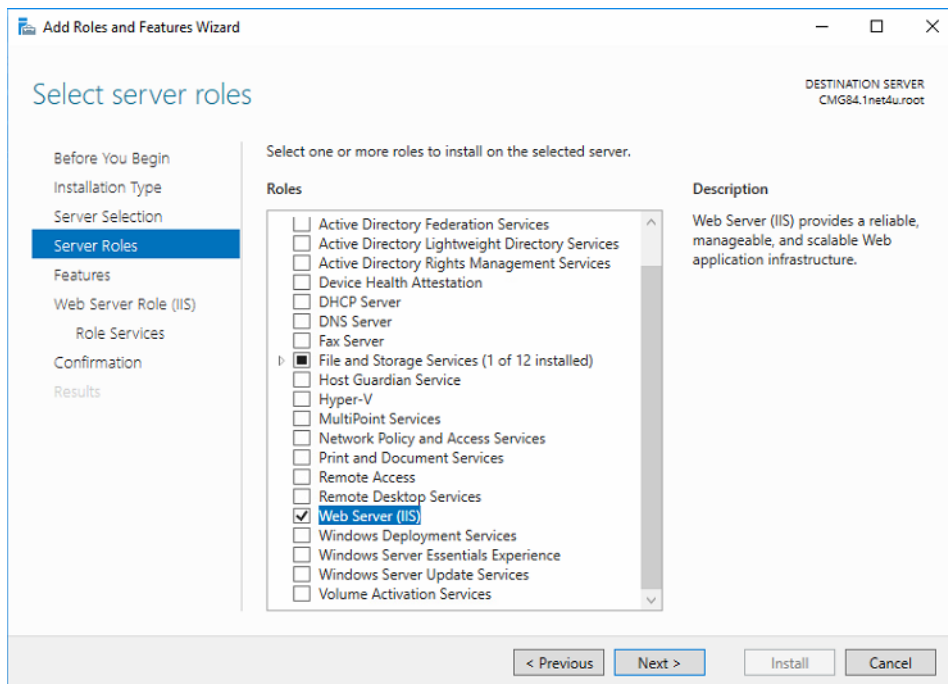
7. Select the **Destination Server**. Make sure your server is selected, and click **Next**.



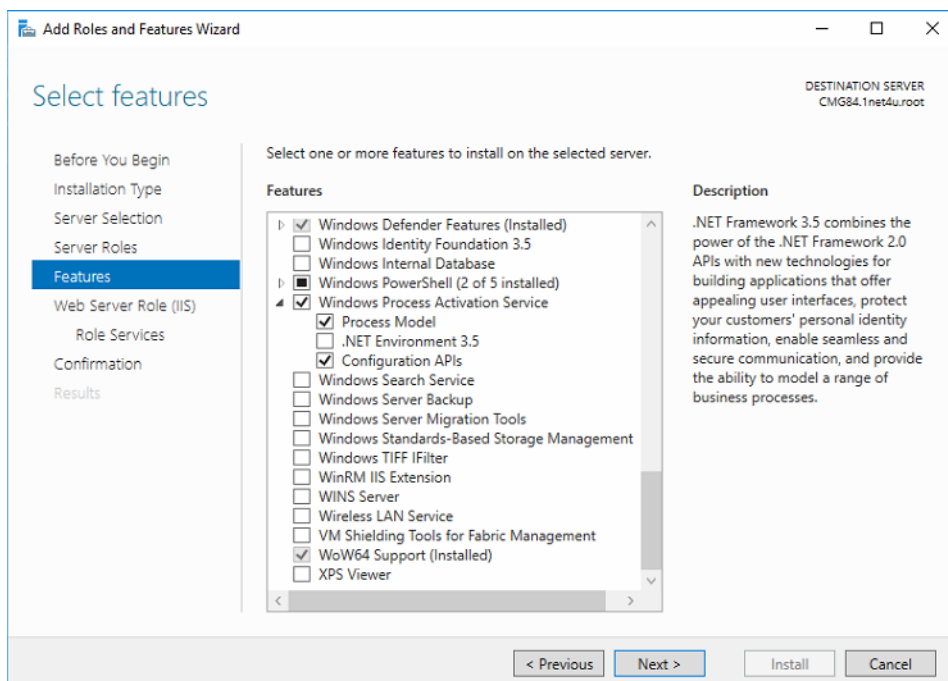
Tip! If you have a multi-server solution, you can do this for all servers at the same time. In this case, you need to log on with a domain account that has local admin rights on all servers. Before starting the **Add Roles and Features Wizard**, you must select option 3 **Add other servers to manage**. You can search for and add the other CMG servers also, and then add them to the selected group of computers.

8. In the **Select server roles** window, select the following role.

- Select **Web Server (IIS)** and click **Add Features** button on the screen and click **Next**.

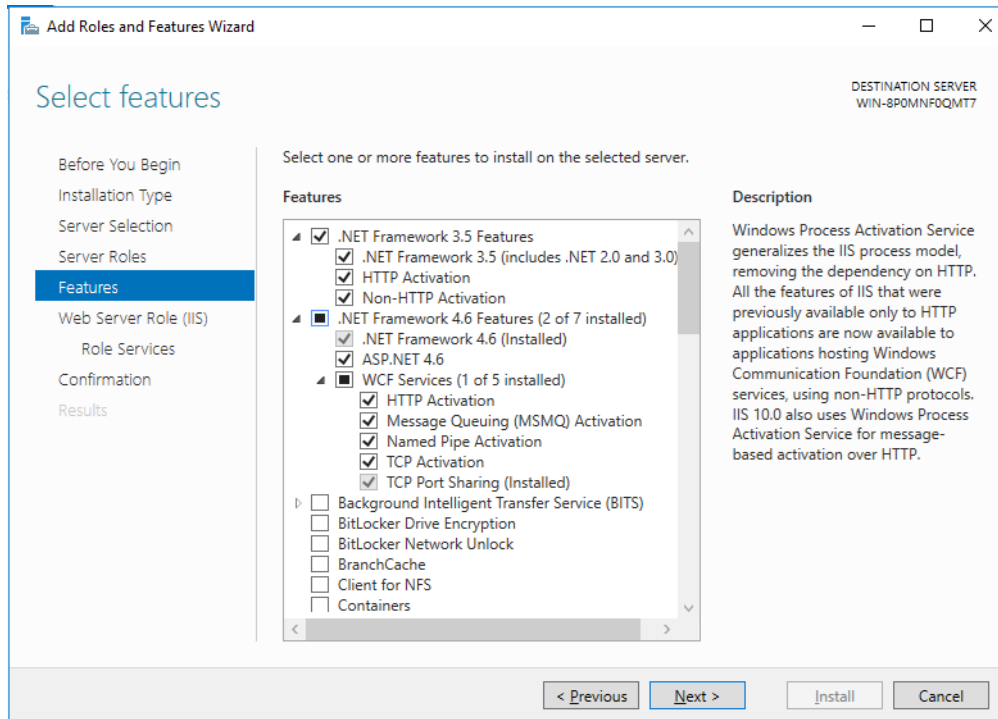


9. In the **Select Features** dialog box, select the following features and click **Next** as mentioned in the following screen.

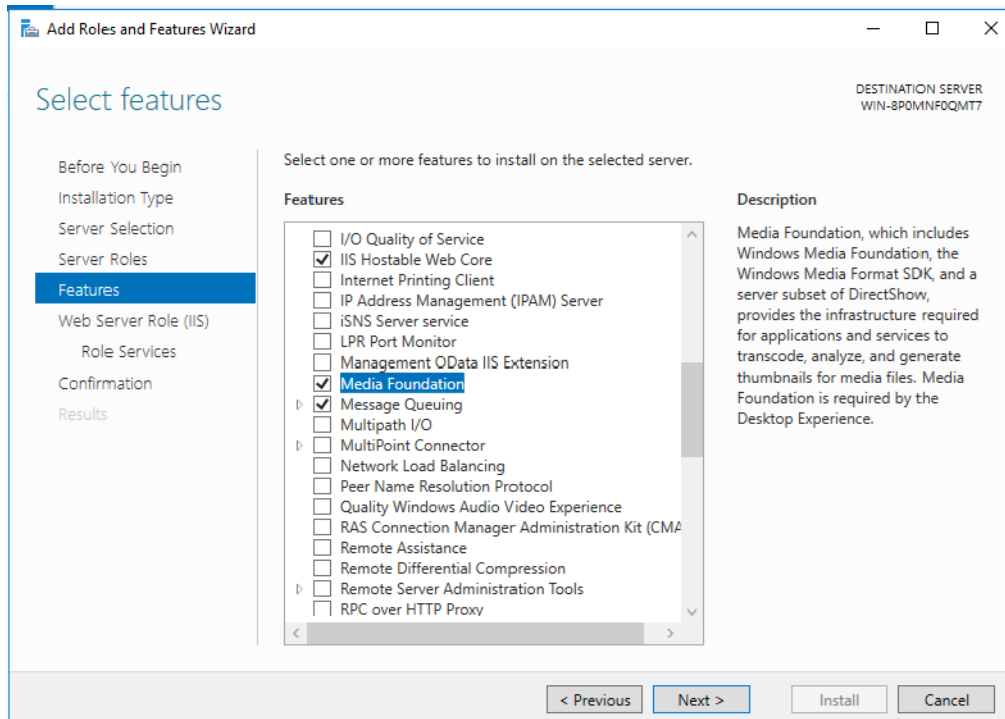


- .Net Framework 3.5 Features
 - .Net Framework 3.5 (include .Net 2.0 and 3.0)
 - HTTP Activation
 - Non-HTTP Activation

- Net Framework 4.6 Features
 - .Net Framework 4.6
 - ASP.NET 4.6
 - WCF Services (Select all sub roles as shown in below screen)

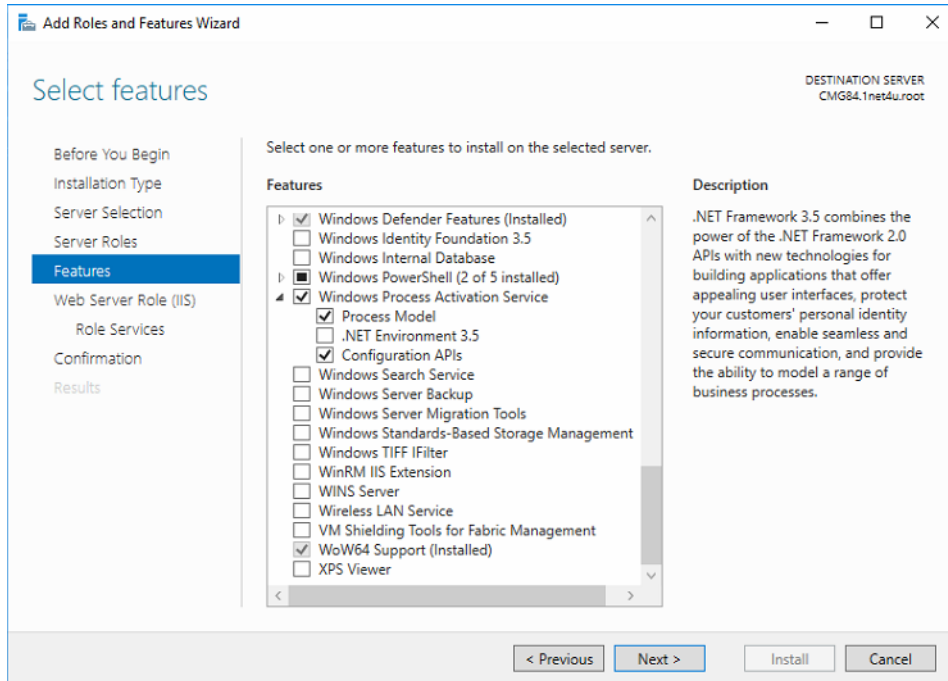


- IIS Hostable Web Core
- Media Foundation

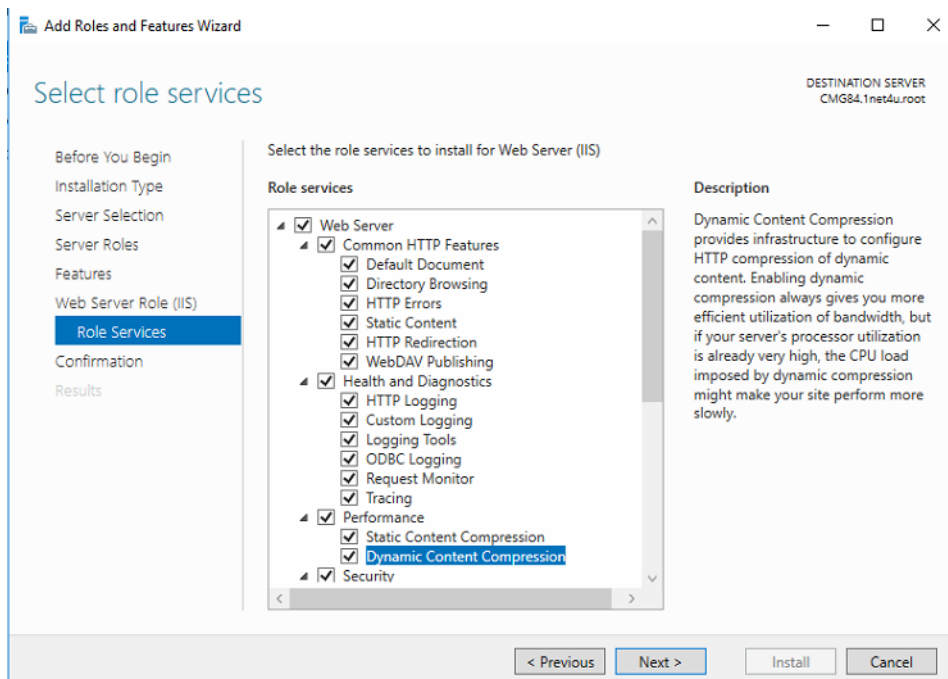


- Windows Process Activation Service
 - Process Model
 - Configuration APIs

NOTE: Windows Process Activation Service (Automatically selected as part of .Net Framework 3.5 Features).

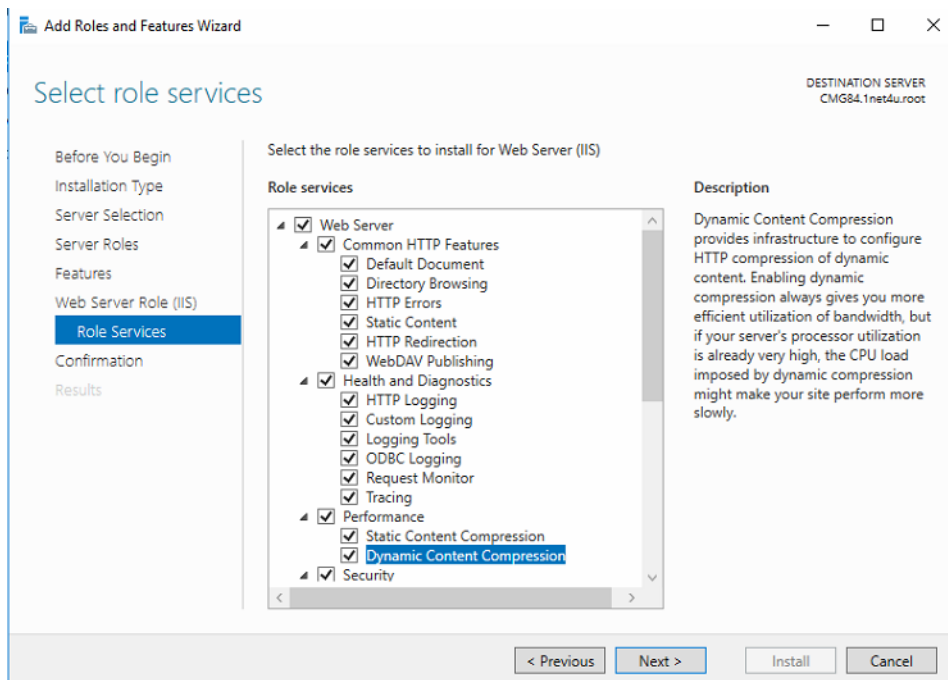


10. In the **Web Service (IIS) – Role Services**, click **Next** to select the following services and click **Next**.



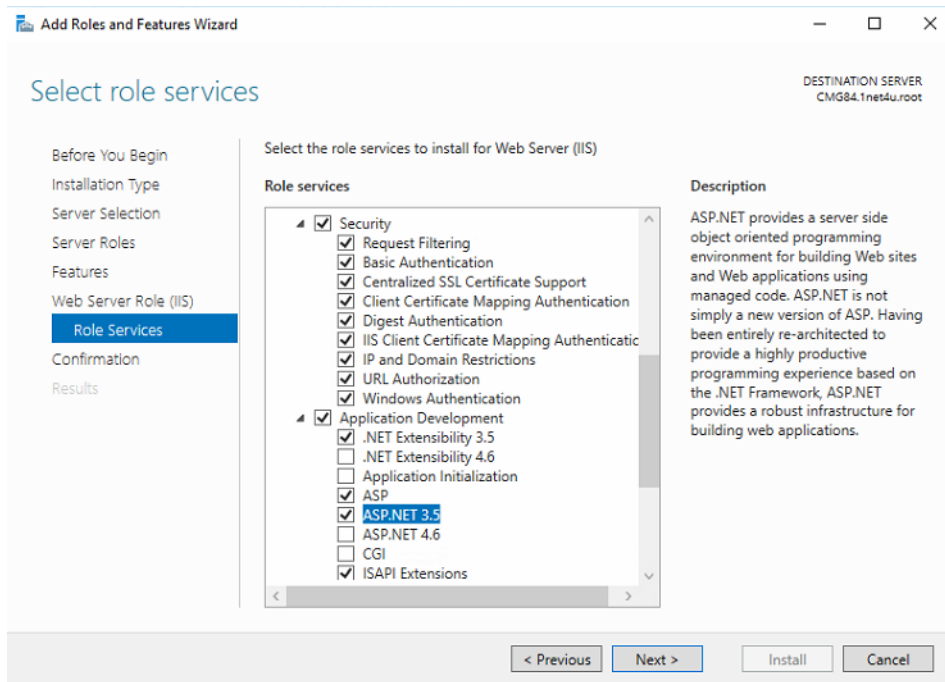
11. Select the following services, and then click **Next** as mentioned in the above screen.

- Common HTTP Features
 - Default Document
 - Directory Browsing
 - HTTP Errors
 - Static Content
 - HTTP Redirection
 - WebDAV Publishing
- Health and Diagnostics
 - HTTP logging
 - Custom Logging
 - Logging Tools
 - ODBC logging
 - Request Monitor
 - Tracing
- Performance
 - Static Content Compression
 - Dynamic Content Compression



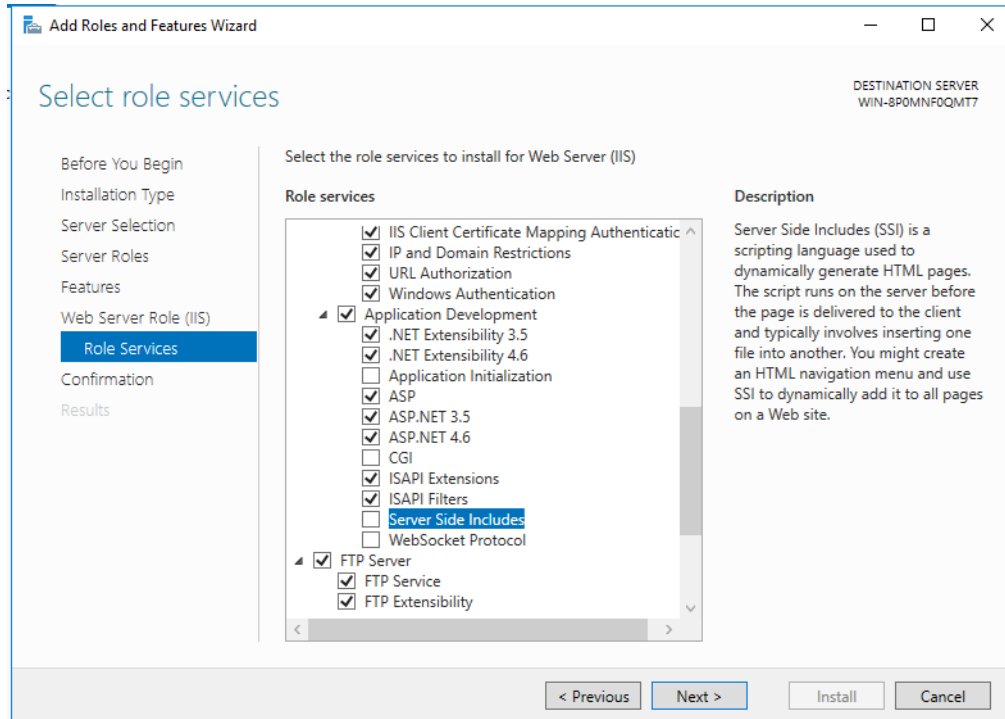
- Security
 - Request Filtering
 - Basic Authentication
 - Centralized SSL Certificate Support
 - Client Certificate Mapping Authentication
 - Digest Authentication
 - IIS Client Certificate Mapping Authentication

- IP and Domain Restrictions
- URL Authorization
- Windows Authentication

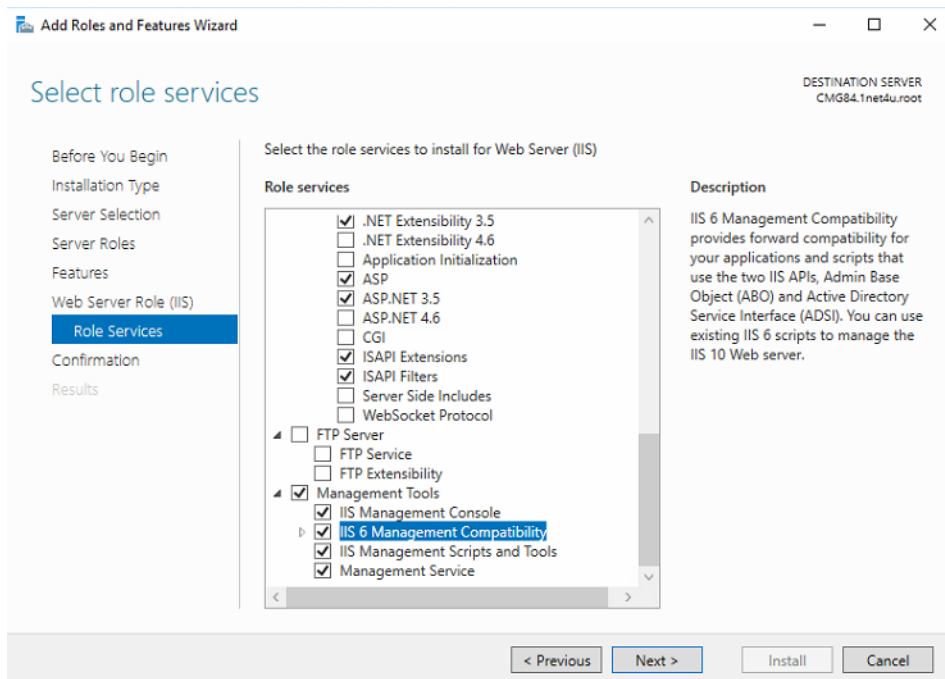


- Application Development
 - .NET Extensibility 3.5
 - .NET Extensibility 4.6
 - ASP
 - ASP.NET 3.5
 - ASP.NET 4.6

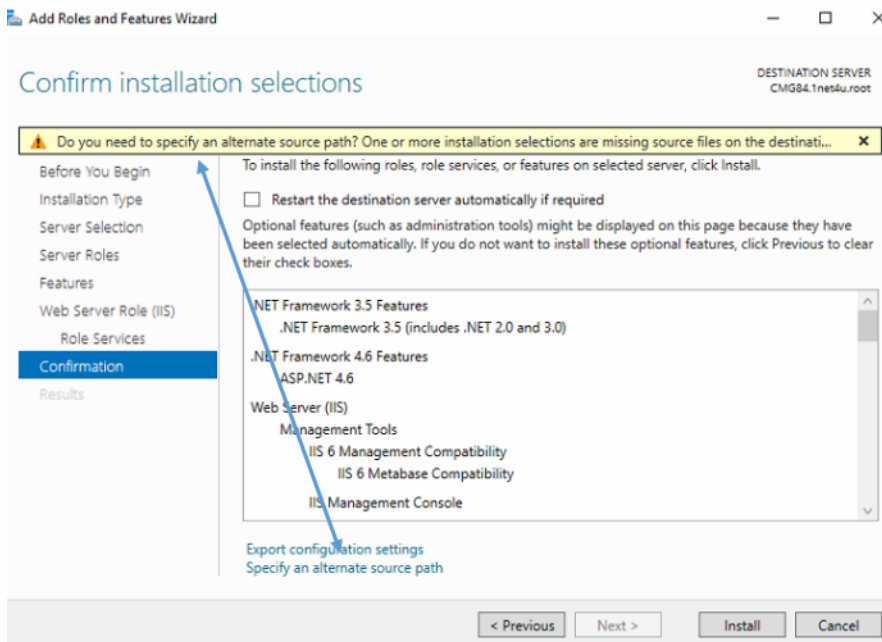
NOTE: ISAPI Extensions and ISAPI Filters (Automatically selected as part of ASP and ASP.NET 3.5).



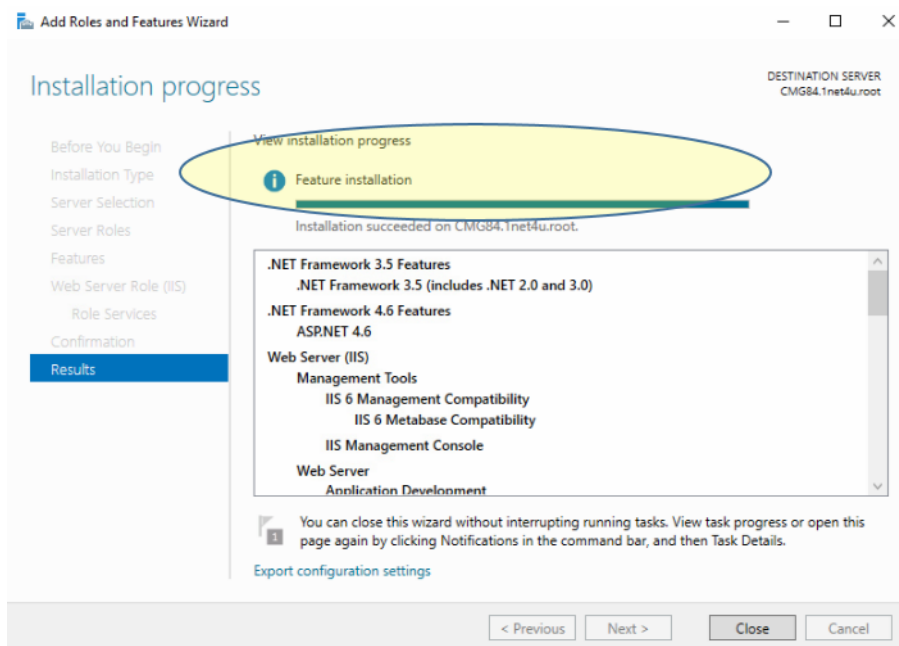
- Management Tools
 - IIS Management Tools
 - IIS 6 Management Console (Select all sub roles)
 - IIS Management Scripts and Tools
 - Management Service



12. If you get the message about any alternate source path in the **Confirm Installation selections** screen, specify an alternate source path (that is, DVD-drive:\sources) as mentioned in the following figure and click **Install**.



13. When the Installation is ready, the following screen displays.



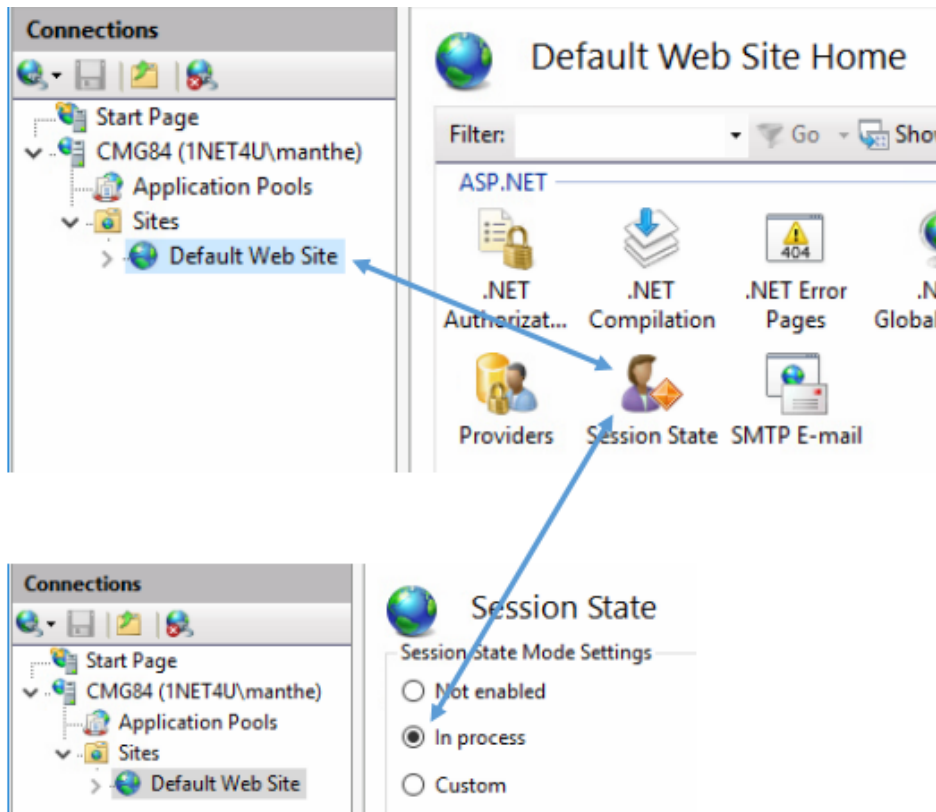
14. Click **OK** and **Install**.

15. **Configure IIS** (Internet Information Services).

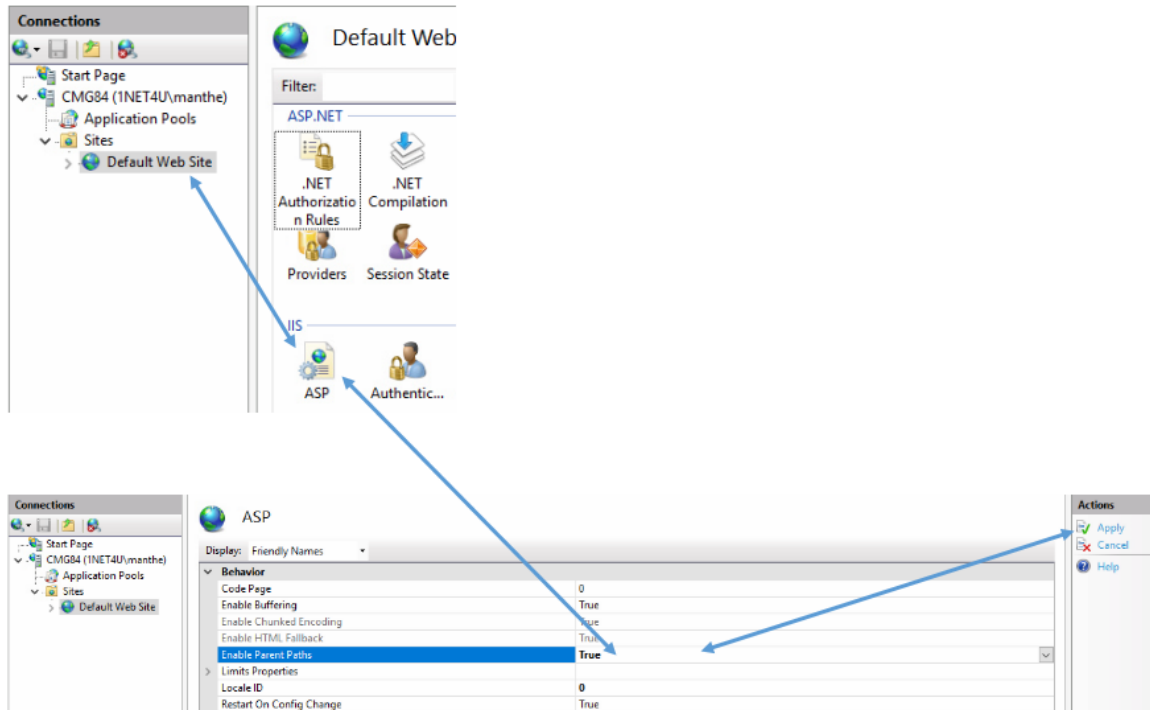
Configuring IIS

To configure server roles, do the following:

1. Go to **Tools** menu in **Server Manager**.
2. Open **IIS Manager** and select **Default Web Site**.
3. Verify that **Session State** is set to **In process** as mentioned in the following screen.

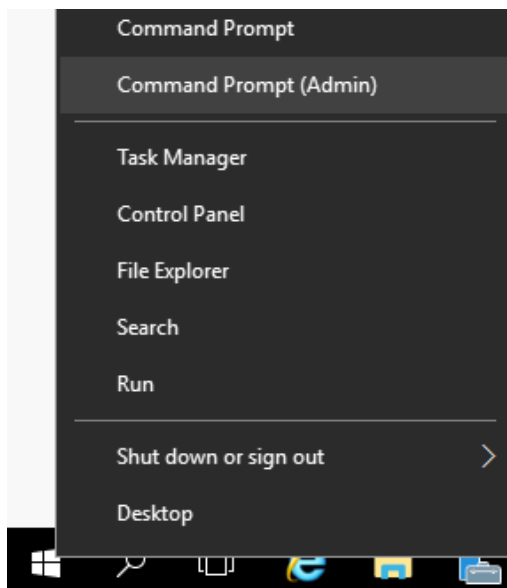


4. In the **IIS** section, open **ASP** and set **Enable Parent Paths** to **True** and click **Apply** as mentioned in the following screen.



Verifying 8dot3 name creation on all drives before installing anything more

1. Open a command prompt as an **Administrator**.
2. Right-click on the **Start** menu (Windows flag) and select **Command Prompt (Admin)**.



3. Check behavior status for 8dot3 name creation (should be 0 – Enable 8dot3 name creation on all volumes).

C:\Windows\system32>**fsutil behavior query disable8dot3**

The registry state is: 2 (Per volume setting - the default).

4. Check C:

C:\Windows\system32>**fsutil behavior query disable8dot3 c:**

The volume state is: 0 (8dot3 name creation is enabled).

The registry state is: 2 (Per volume setting - the default).

Based on the above two settings, 8dot3 name creation is enabled on c:

5. Check D: (or any other drive on the server).

C:\Windows\system32>**fsutil behavior query disable8dot3 d:**

The volume state is: 1 (8dot3 name creation is disabled).

The registry state is: 2 (Per volume setting - the default).

Based on the above two settings, 8dot3 name creation is disabled on d:

6. Enable 8dot3 name creation on all drives

C:\Windows\system32>**fsutil behavior set disable8dot3 0**

The registry state is now: 0 (Enable 8dot3 name creation on all volumes).

7. Verify D: again to verify (and all other drives).

C:\Windows\system32>**fsutil behavior query disable8dot3 d:**

The volume state is: 1 (8dot3 name creation is disabled).

The registry state is: 0 (Enable 8dot3 name creation on all volumes).

Based on the above two settings, 8dot3 name creation is enabled on d:

IIS 6 Compatibility

To install the IIS 6.0 Management Compatibility Components, do the following:

1. In the **Control Panel**, navigate to **Administrative Tools**, and then **Server Manager**.
2. In the left navigation pane, expand **Roles**.
3. Right-click **Web Server (IIS)** and select **Add Role Services**.
4. On the **Select Role Services** panel, then **IIS 6 Management Compatibility**, select:
 - IIS 6 Metabase Compatibility console
 - IIS 6 Management console and click Next.
5. Click **Install** on the **Confirm Installations Selections** panel.
6. Click **Close** to leave the **Add Role Services Wizard**.

Microsoft SQL Server Installation

This section describes the installation and configuration of Microsoft SQL Server 2012 and higher and the configuration required for CMG. For more information on SQL Server, please refer to the Microsoft documentation.

NOTE: Do not install the database in case-sensitive or binary mode.

Before installing SQL Server, consider the following:

- SQL Server must be installed as a "Default instance". Named instances are not supported.
- Microsoft SQL Express does not support scheduled tasks (e.g., backup handling and clearing of the transaction log), which means that such tasks must be handled manually. See the description provided in the document CMG Configuration Guide [4].

NOTE: When using Microsoft SQL Express, "TCP/IP" must be enabled in the "SQL Server Configuration Manager" and also the windows service "SQL Server Browser" should be running (start mode "Automatic").

Install SQL Server 2012

To install SQL Server 2012 on CMG Server, do the following:

1. Run auto play from the MSSQL Server media.
The **SQL Server Installation Center** is opened.
2. Select **Installation** and then:
 - a. For Microsoft SQL Server 2012:
 - i. Select **New SQL Server stand-alone installation or add features to an existing installation**.
 - ii. Follow the instructions in the installation wizard until you reach the **Installation Type** page.
3. For SQL Server 2012, select **SQL Server Feature Installation**, and click **Next**. Continue to follow the instructions in the installation wizard.
4. When you reach **Feature Selection**, select the following:
 - Database Engine Services
 - SQL Server Replication
 - Full-Text Search
 - SQL Server Books online (not available for SQL Server 2012)
 - Management Tools Complete

NOTE: If you are installing SQL Server Express, not all of the features mentioned are available. For SQL Server Express installations, click Select All.
5. In the **Instance Configuration** dialog, select **Default Instance**.
NOTE: Named instances are not supported.

6. The **Server Configuration** dialog opens. Do the following:
 - a. In the **Service Account** tab:
 - i. Use built in system account and local system.
 - ii. Set **Startup type** to **Automatic**.
 - b. In the **Collation** tab:
 - i. Click **Customize** next to **Database Engine**.
 - ii. Select **Windows collation designator** and select the appropriate designator from the list.
For example:
Sweden/Finland: Finnish_Swedish
Denmark/Norway: Danish_Norwegian
 - iii. For remaining settings in this dialog, select the default values.
7. In the **Database Engine Configuration** dialog, on the **Account provisioning** tab, do the following:
 - a. Select **Mixed Mode**.
 - b. Click **Add current user** to specify SQL Server administrators.
8. Follow the remaining instructions in the installation wizard.
9. When SQL Server is installed, verify that the following service keys are started:
 - a. SQL Server (MSSQLSERVER)
 - b. SQL Server Agent (MSSQLSERVER)

NOTE: For SQL Express, this service key is disabled.
10. Open **SQL Server Configuration Manager** from the **Configuration Tools** folder installed with SQL Server 2012.
11. Expand **SQL Server Network Configuration**, and select **Protocols for MSSQLSERVER**.
12. Enable **Named Pipes** and **TCP/IP**.

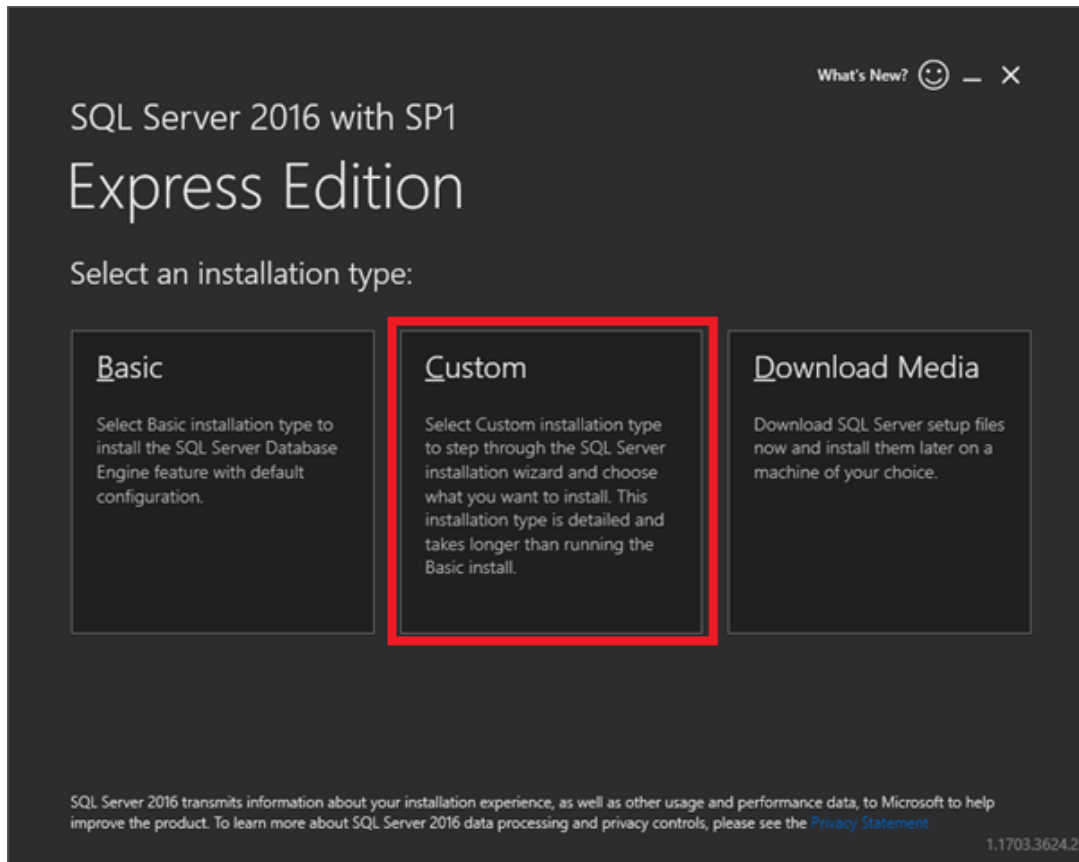
NOTE:

- Microsoft SQL Server 2005 Backward Compatibility pack has to be installed as an addition to Microsoft SQL Server. See CMG Installation Guide [3] for more information.

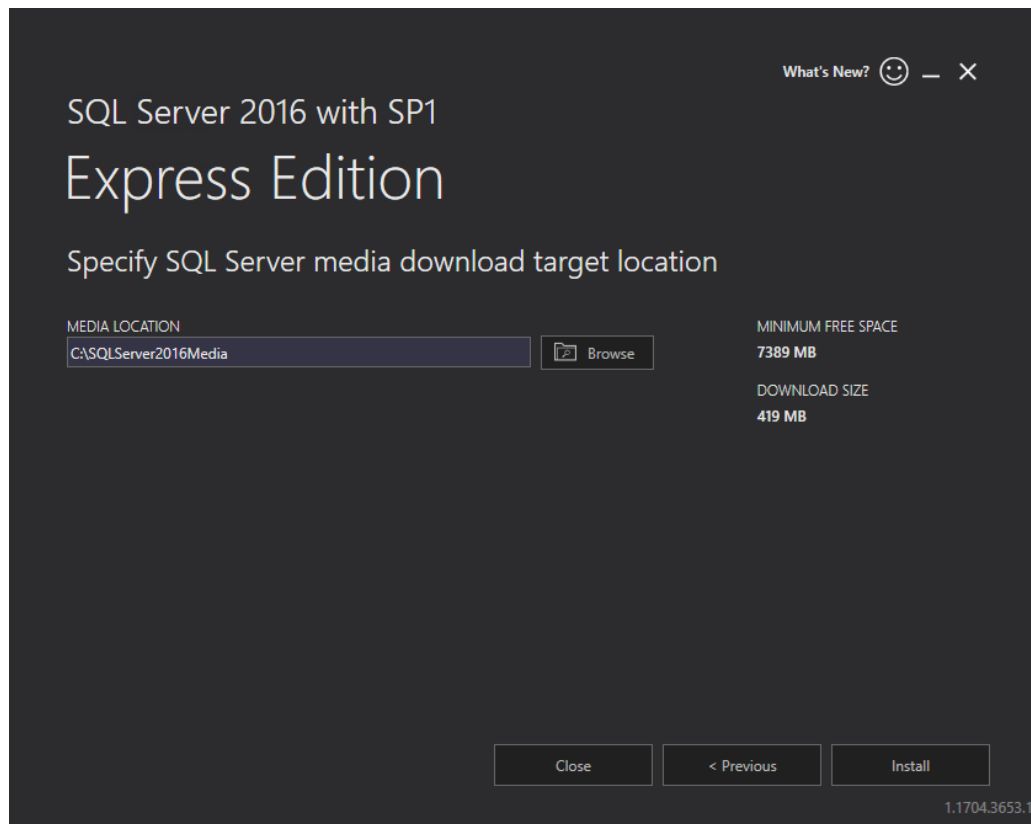
Install SQL Server 2016

To install SQL Server 2016 Express on CMG Server, do the following:

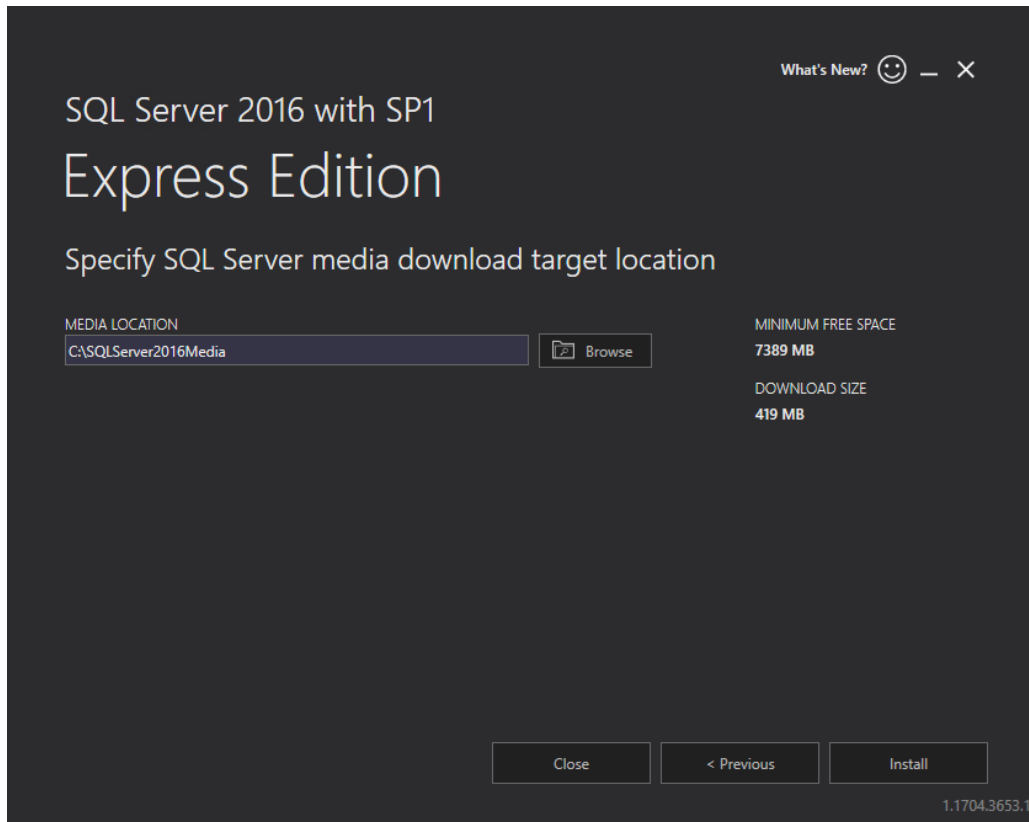
1. Run the setup file as an Administrator. The Installation type window is displayed.
2. Select **Custom** when installing SQL 2016 Express from Internet (**Basic** installs name Instance, not default Instance) after downloaded and starts installing (SQLServer2016-SSEI-Expr.exe) file as shown in below screen.



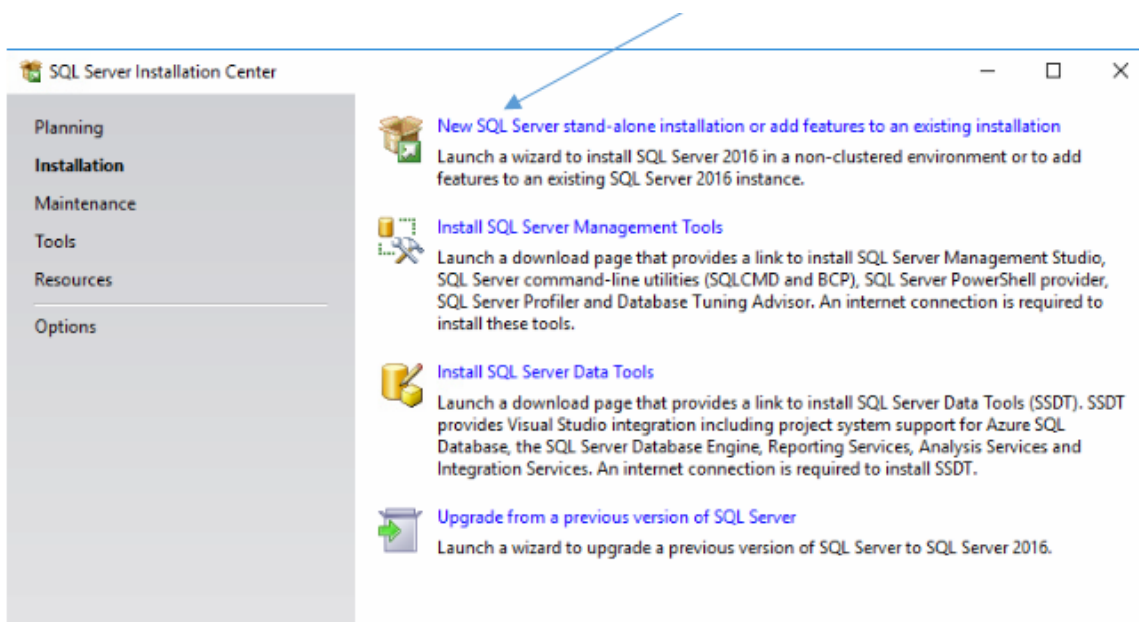
3. Select the **Media Location** to download media.



4. Run auto play from the **MSSQL Server Media**. The following screen **SQL Server Installation Center** is displayed.

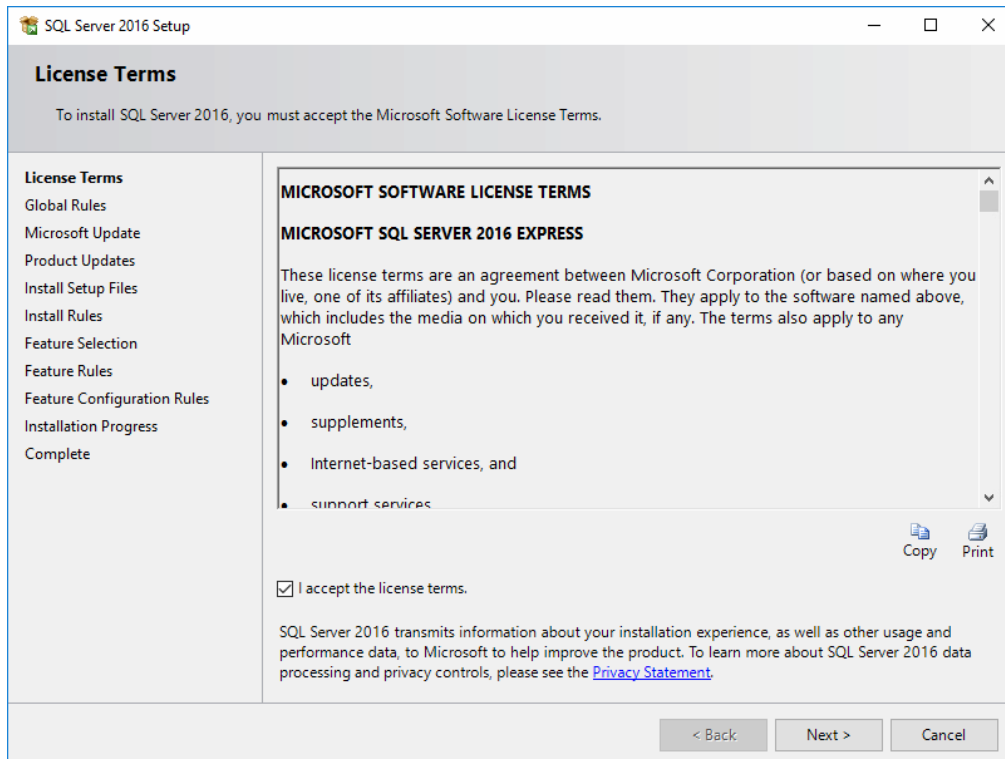


5. Select **Installation > New SQL Server stand-alone installation or add features to an existing installation** as mentioned in the following screen.

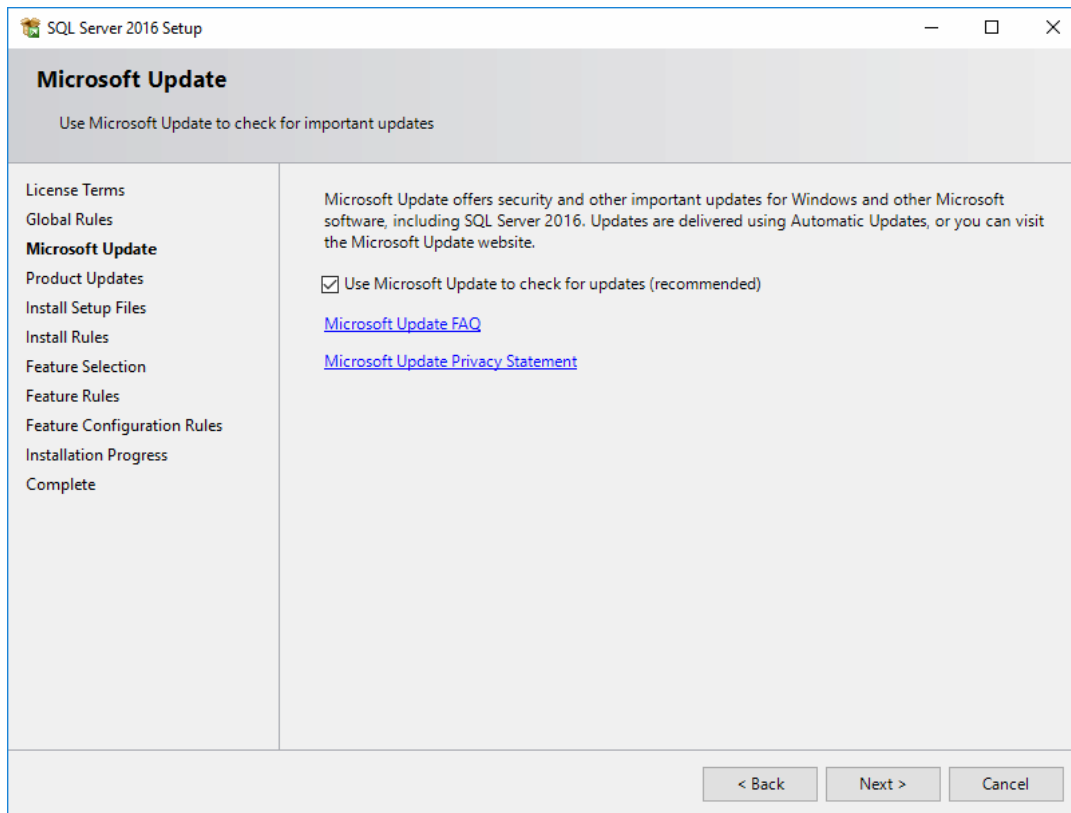


(Follow the instructions in the installation wizard until you reach the Installation Type page).

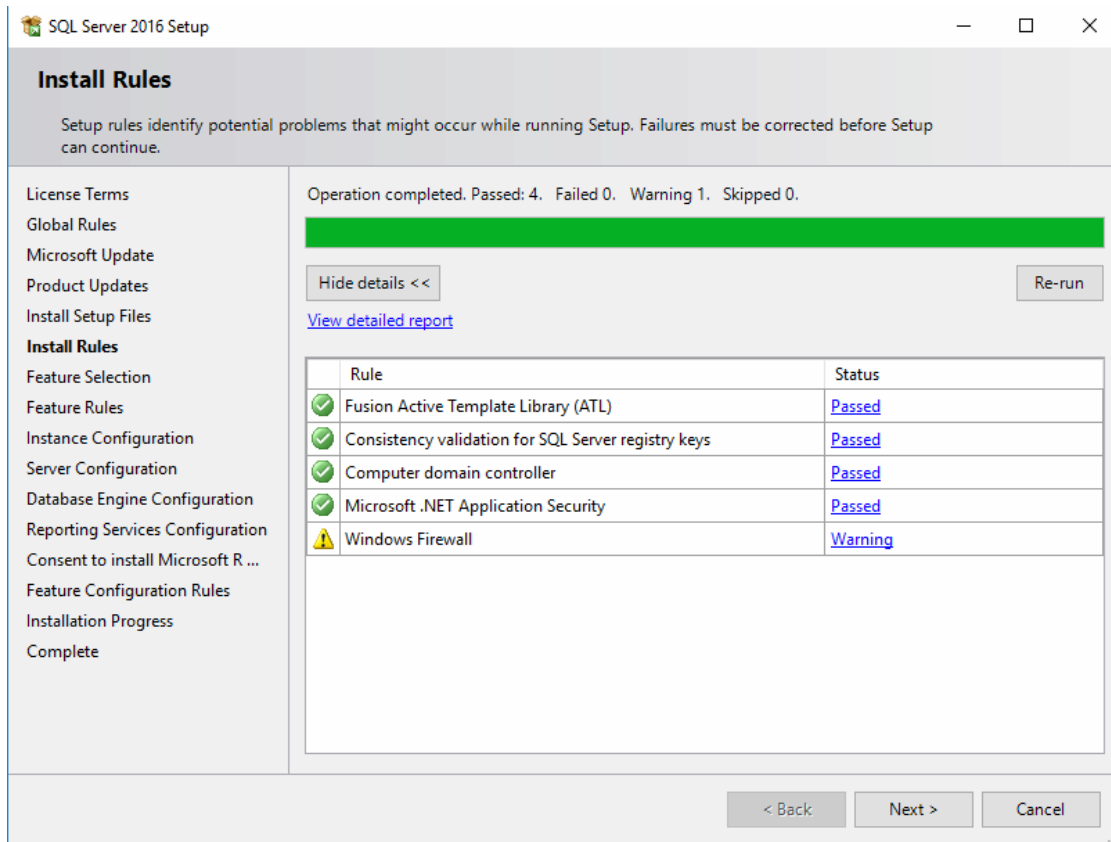
6. Select to perform a new installation of SQL Server 2016 and click **Next**.



7. Check the **Use Microsoft Update to check for important updates** (recommended) and click **Next** as mentioned in the following screen.



NOTE: If the internal **Windows Firewall** is disabled, a warning message is displayed as mentioned in the following screen.

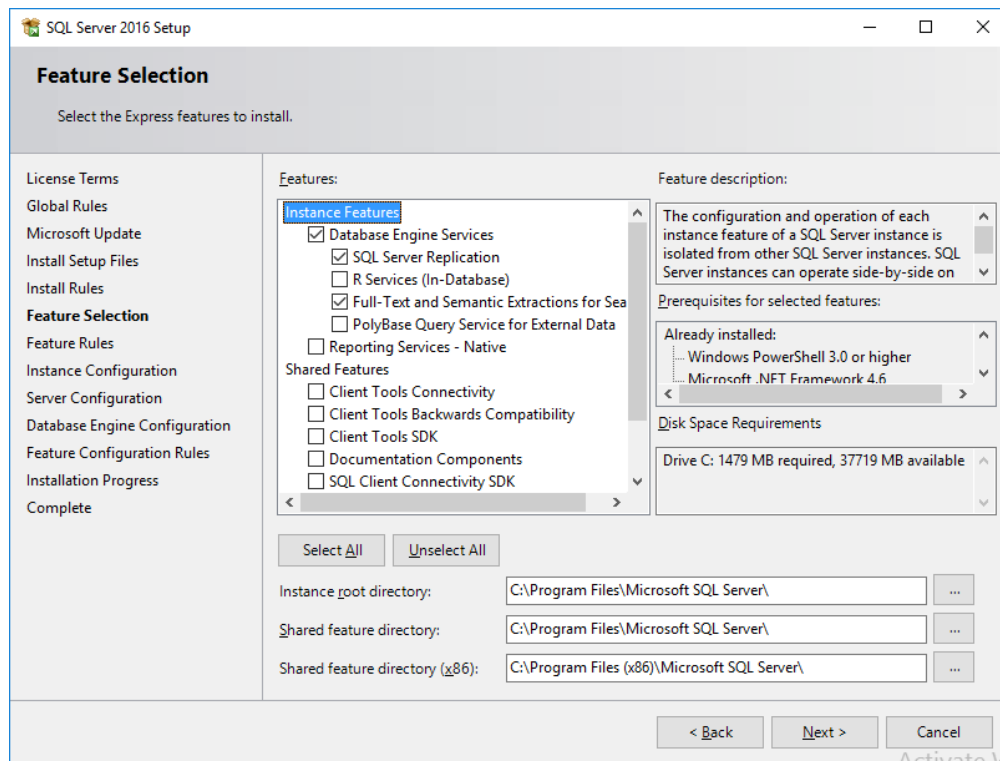


8. Click **Next**.

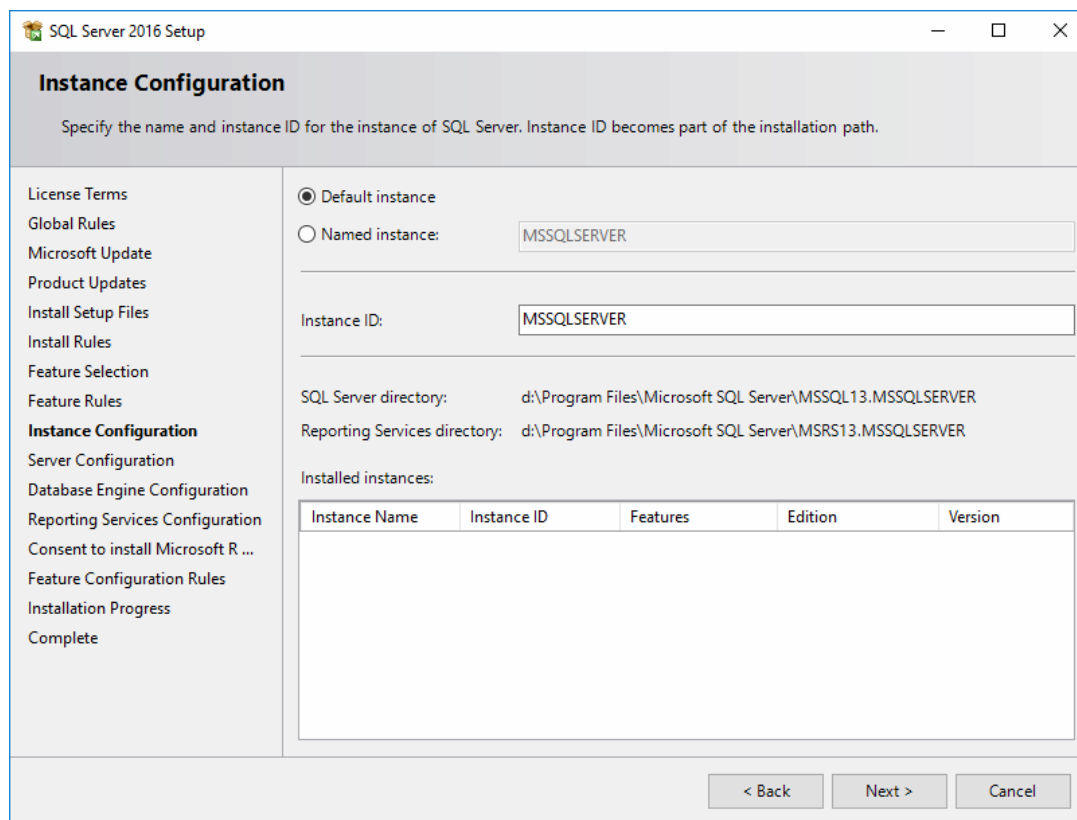
9. When you reach **Feature Selection**, select the following features:

- Database Engine Services
- SQL Server Replication
- Full-Text and semantic extractions

10. Click **Next**.

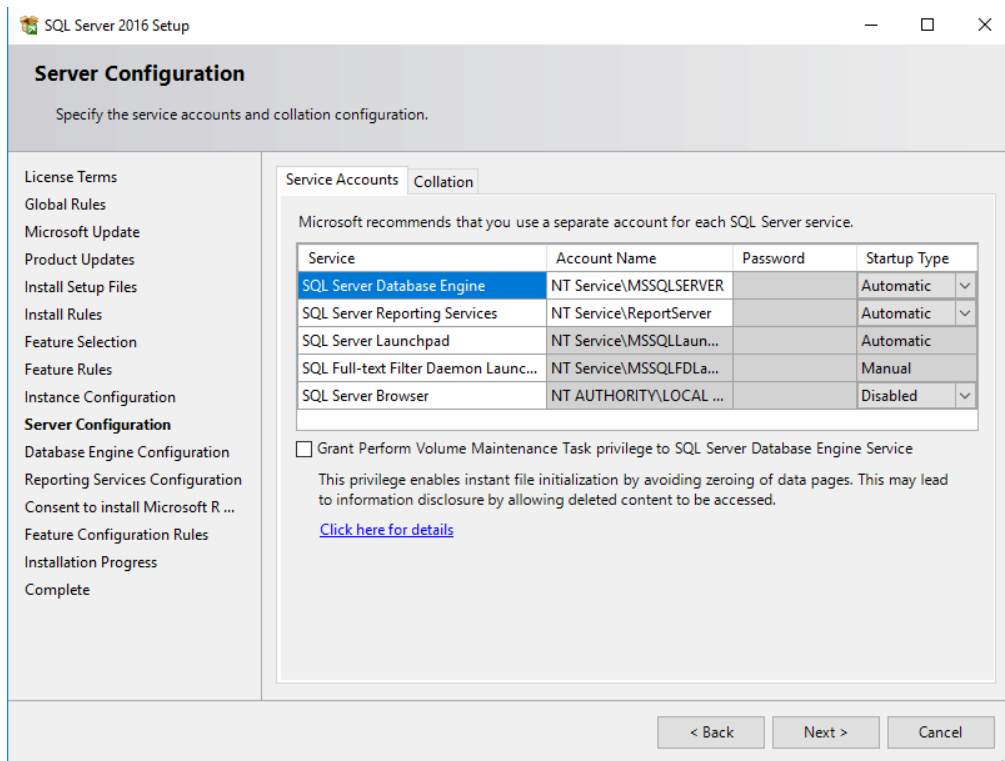


11. In the **Instance Configuration** dialog, select **Default Instance** as mentioned in the following figure.



NOTE: Named instances are not supported.

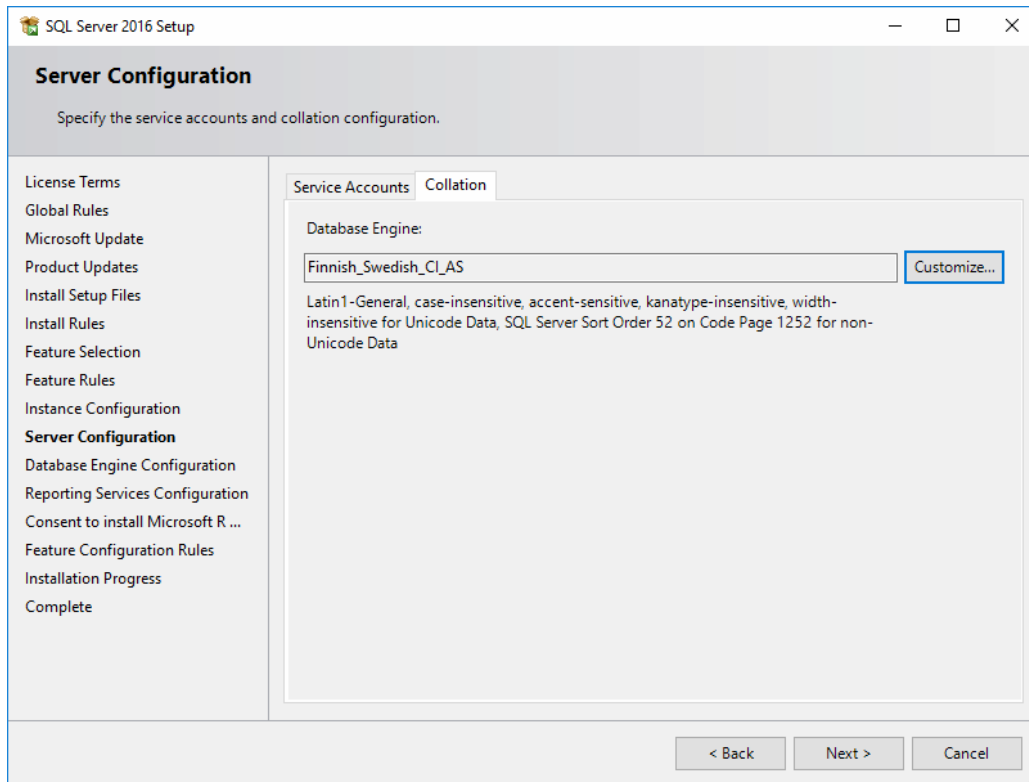
12. Click **Next**. The **Server Configuration** screen displays.



13. In the **Server Configuration** dialog, select **Service Account** tab and do the following:

- Use built in system account and local system.
- Set Startup type to Automatic.

14. In the **Server Configuration** dialog, select **Collation** tab. The following screen appears.



- In the **Collation** tab, do the following to set your Collation:
 - Click **Customize** next to Database Engine.
 - Set Startup type to Automatic.
 - Select Windows collation designator and select the appropriate designator from the list.
For example: Sweden/Finland: Finnish_Swedish
Denmark/Norway: Danish_Norwegian
 - For remaining settings in this dialog, select the default values.

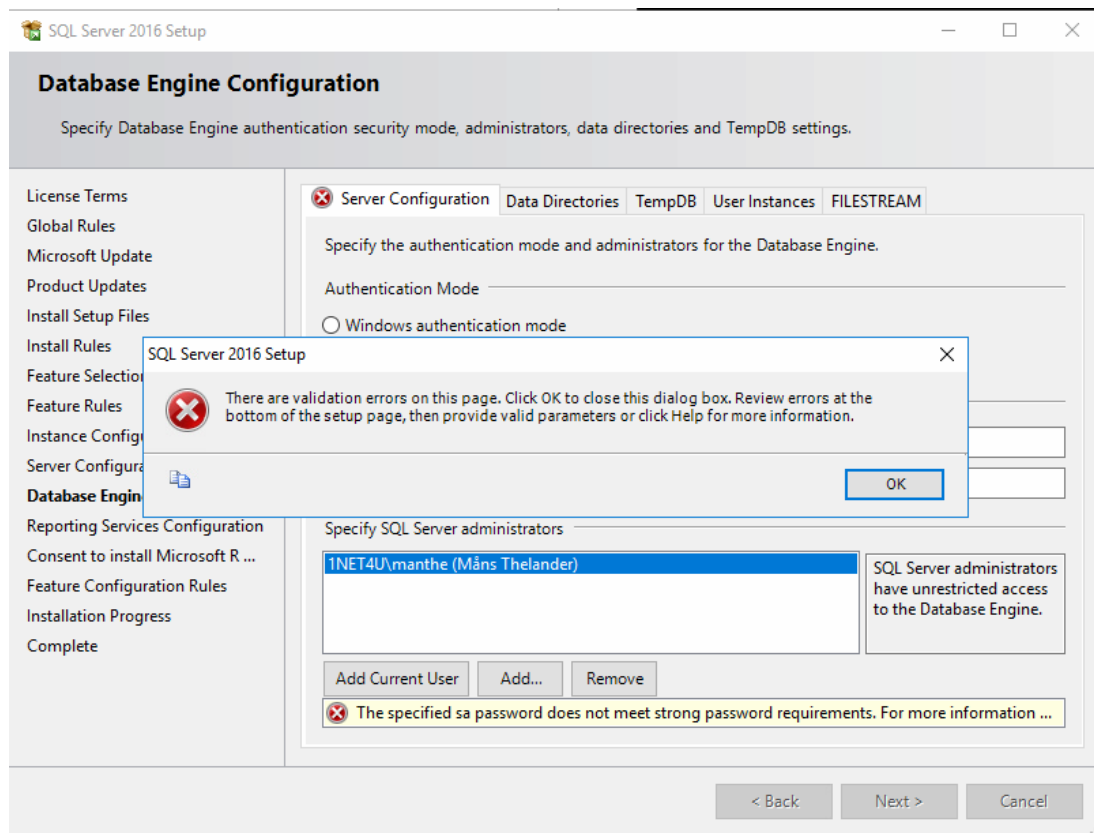
15. Click **Next**. The following **Database Engine Configuration** screen is displayed.

The screenshot shows the 'Database Engine Configuration' window in the SQL Server 2016 Setup. The window has a title bar 'SQL Server 2016 Setup' and standard window controls. Below the title bar is a subtitle 'Database Engine Configuration' and a description 'Specify Database Engine authentication security mode, administrators, data directories and TempDB settings.' On the left is a navigation pane with the following items: License Terms, Global Rules, Microsoft Update, Product Updates, Install Setup Files, Install Rules, Feature Selection, Feature Rules, Instance Configuration, Server Configuration, **Database Engine Configuration** (highlighted), Reporting Services Configuration, Consent to install Microsoft R..., Feature Configuration Rules, Installation Progress, and Complete. The main area has tabs: 'Server Configuration' (selected), 'Data Directories', 'TempDB', 'User Instances', and 'FILESTREAM'. Under the 'Server Configuration' tab, the instruction is 'Specify the authentication mode and administrators for the Database Engine.' There are two radio buttons for 'Authentication Mode': 'Windows authentication mode' (unselected) and 'Mixed Mode (SQL Server authentication and Windows authentication)' (selected). Below this is a text field for 'Specify the password for the SQL Server system administrator (sa) account.' with two input boxes: 'Enter password:' and 'Confirm password:', both containing masked characters. Below the password fields is a section 'Specify SQL Server administrators' with a list box containing '1NET4U\manthe (Måns Thelander)'. To the right of the list box is a text box stating 'SQL Server administrators have unrestricted access to the Database Engine.' Below the list box are three buttons: 'Add Current User', 'Add...', and 'Remove'. At the bottom of the window are three buttons: '< Back', 'Next >', and 'Cancel'.

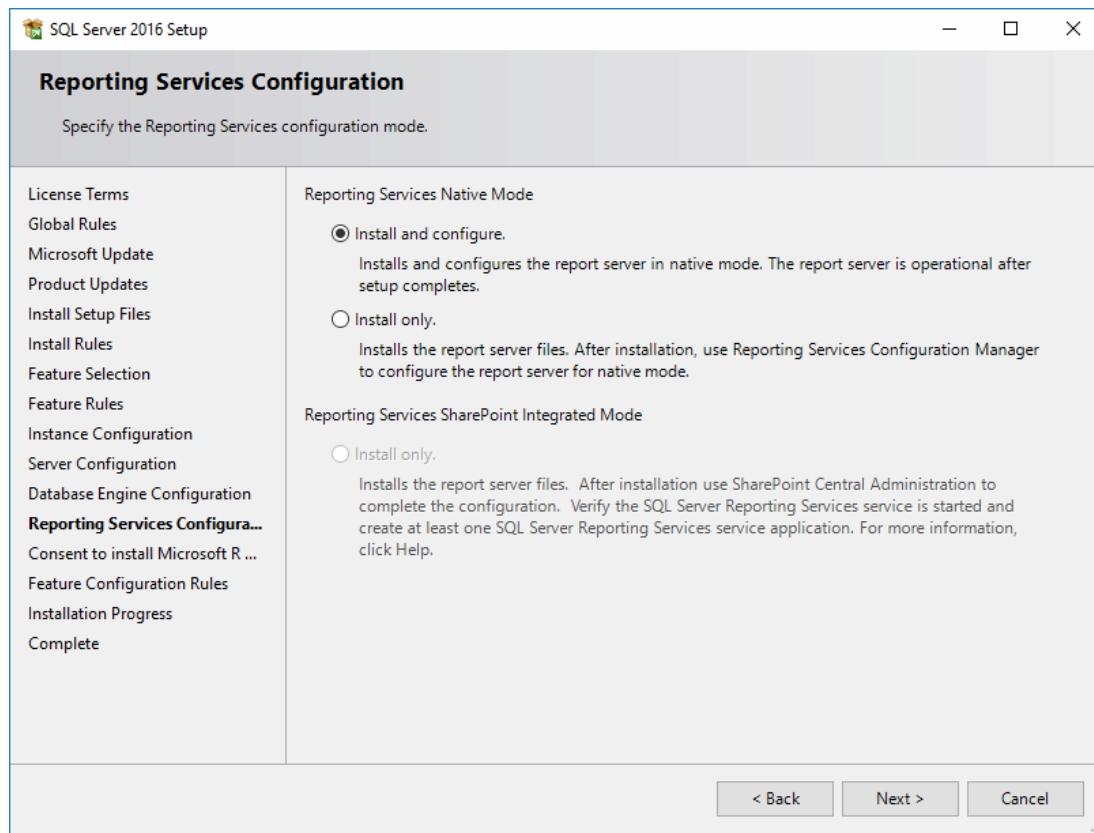
– In the **Database Engine Configuration** screen, do the following:

- Select **Mixed Mode** as Authentication mode.
- Enter the password that will be used for the SA account.
- Click **Add** current user to specify SQL Server administrators.

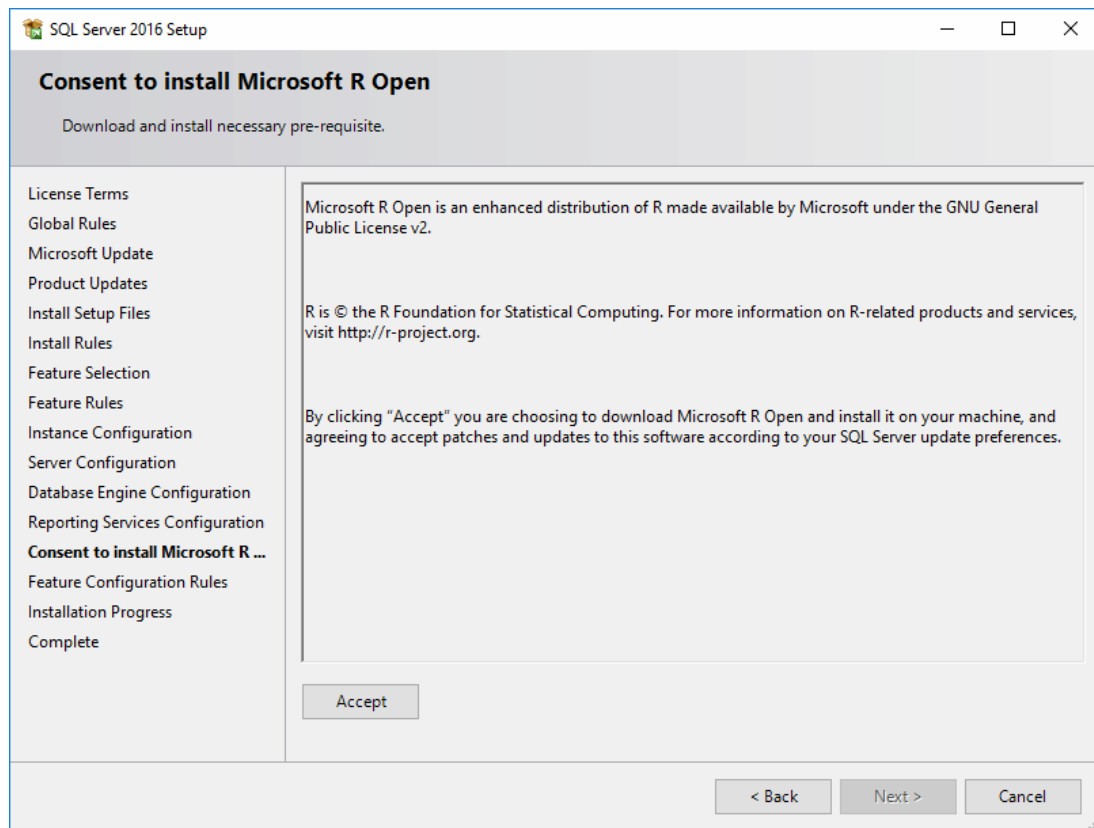
NOTE: If your server is joined in a domain with password policies, you have to set a password that meets the complexity of that policy.



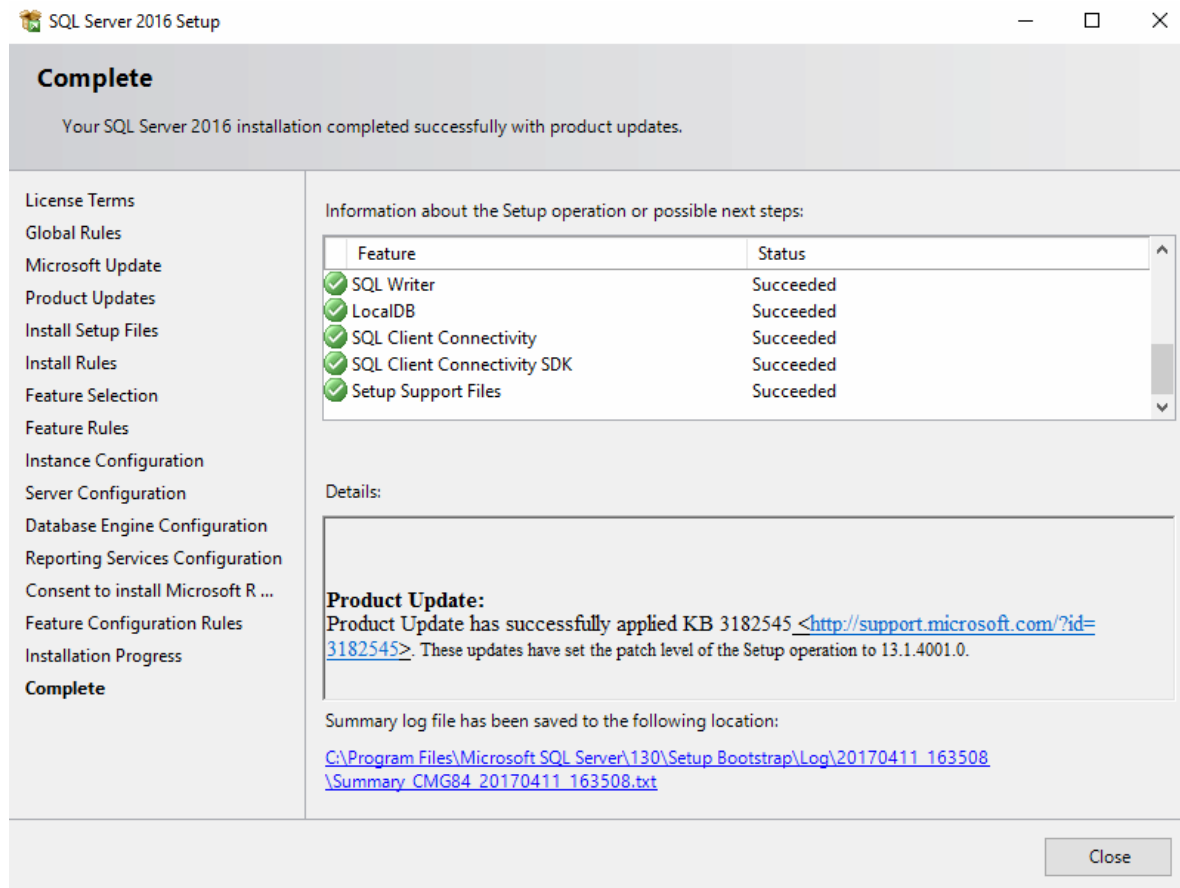
16. In the **Report Service Configuration** screen, select **Install and configure** and click **Next**. The following screen appears.



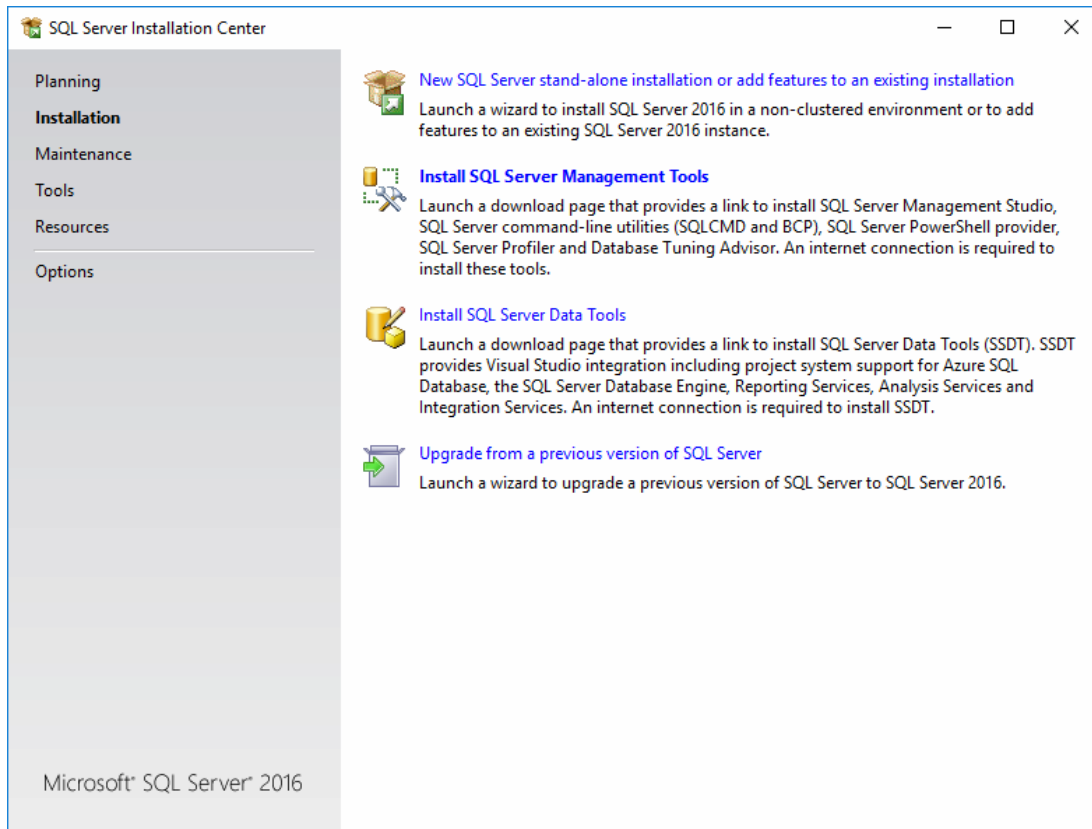
17. Click **Accept** and then click **Next**.



18. Click **Accept** and click **Next**. The following Complete screen is displayed with all the product updates.



19. Click the **Install the SQL Management Tools**.



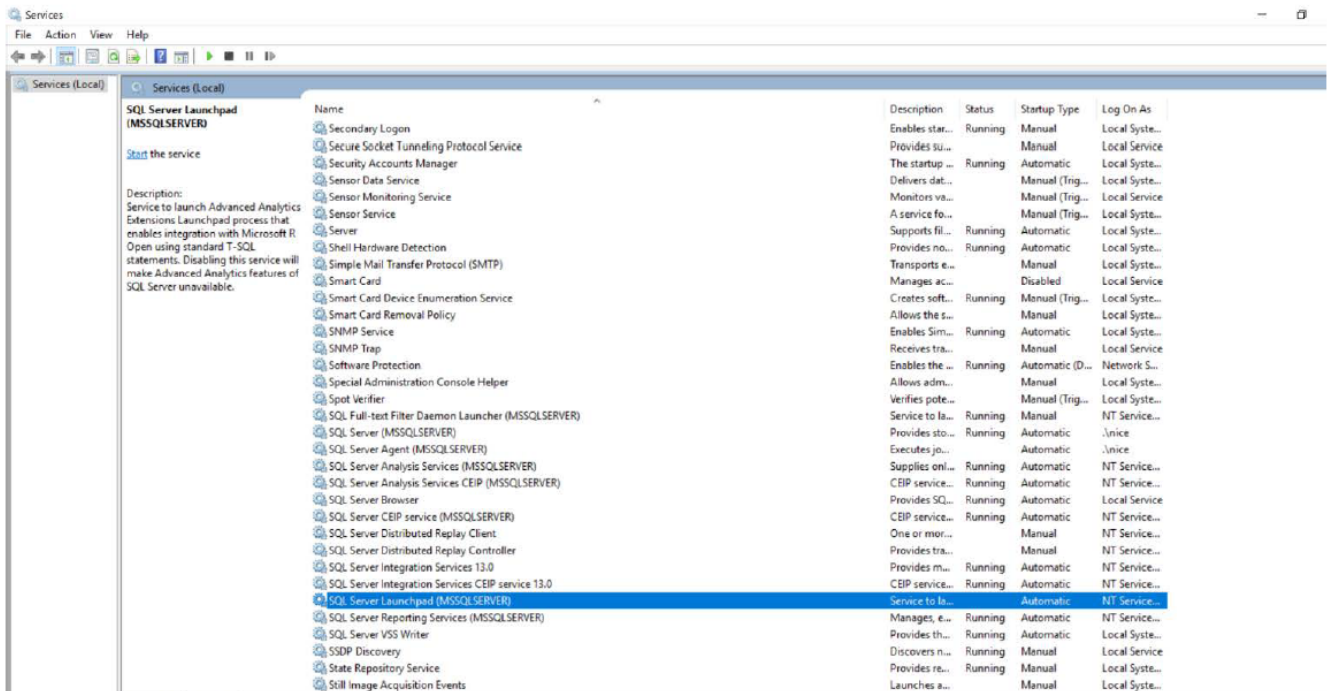
20. Click Close after the successful completion of the **Install the SQL Management Tools**.

NOTE: If you have installed SQL Server 2016 Enterprise edition, you must stop the below mentioned services (if present) from running before installing CMG.

- **SQL Server Launchpad Service**
- **SQL Server PolyBase Data Movement**
- **SQL Server PolyBase Engine**

To stop the services, do the following:

- Click the **Windows** start menu, then type services.msc and search for **SQL Server Launchpad** service.



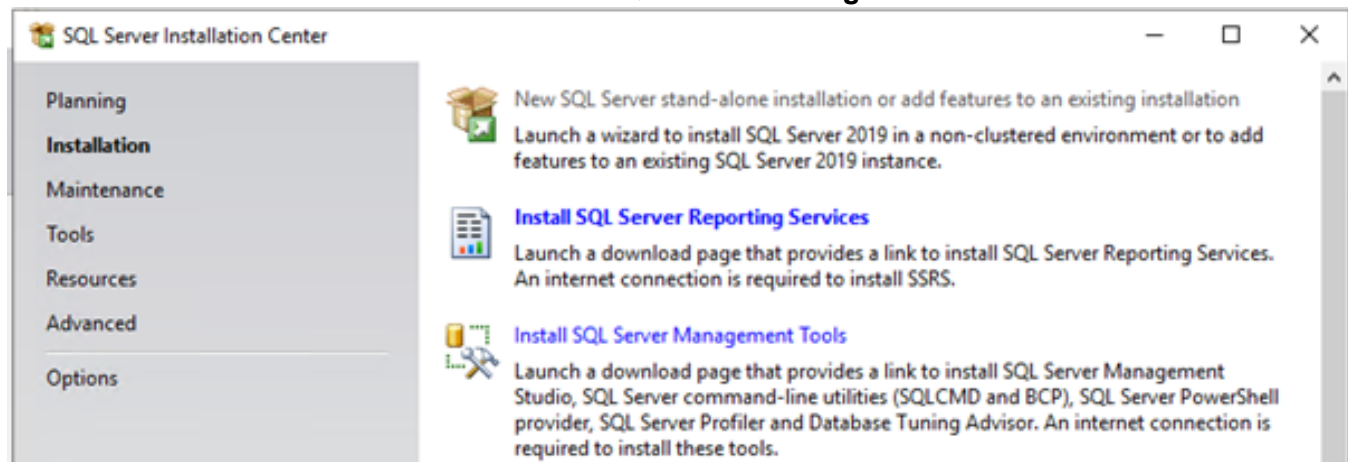
- Go to **SQL Server Launchpad (MSSQLSERVER)**, right-click and select **Stop**.
- Repeat the above steps for **SQL Server PolyBase Data Movement** and **SQL Server PolyBase Engine** to stop the services.

Install SQL Server 2019

You can install SQL Server 2019 Standard version or SQL Express version on InAttend Server.

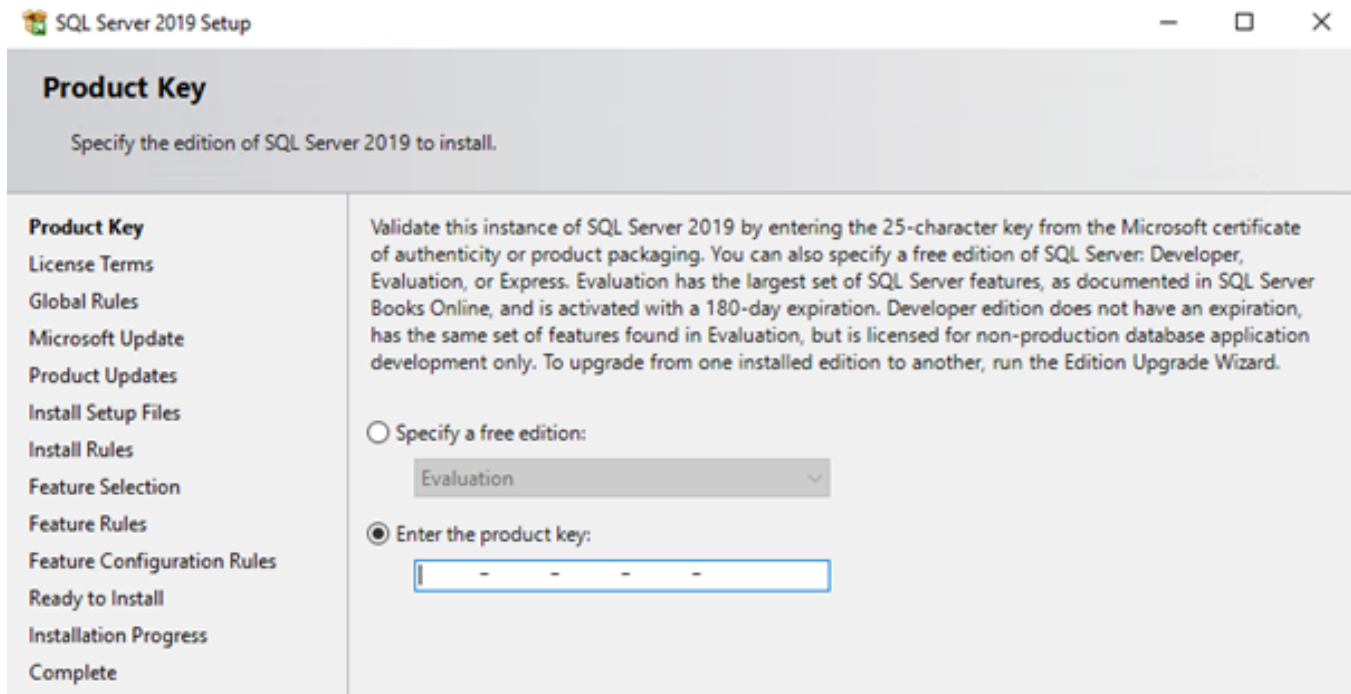
To install SQL Server 2019 Standard version on InAttend Server, do the following:

1. Run auto play from the Microsoft SQL Server media. The **SQL Server Installation Center** opens.
2. Select **Installation** and then select **Install SQL Server Management Tools**.



3. Install Setup Files and Rules.

4. Enter the product key and click **Next**.

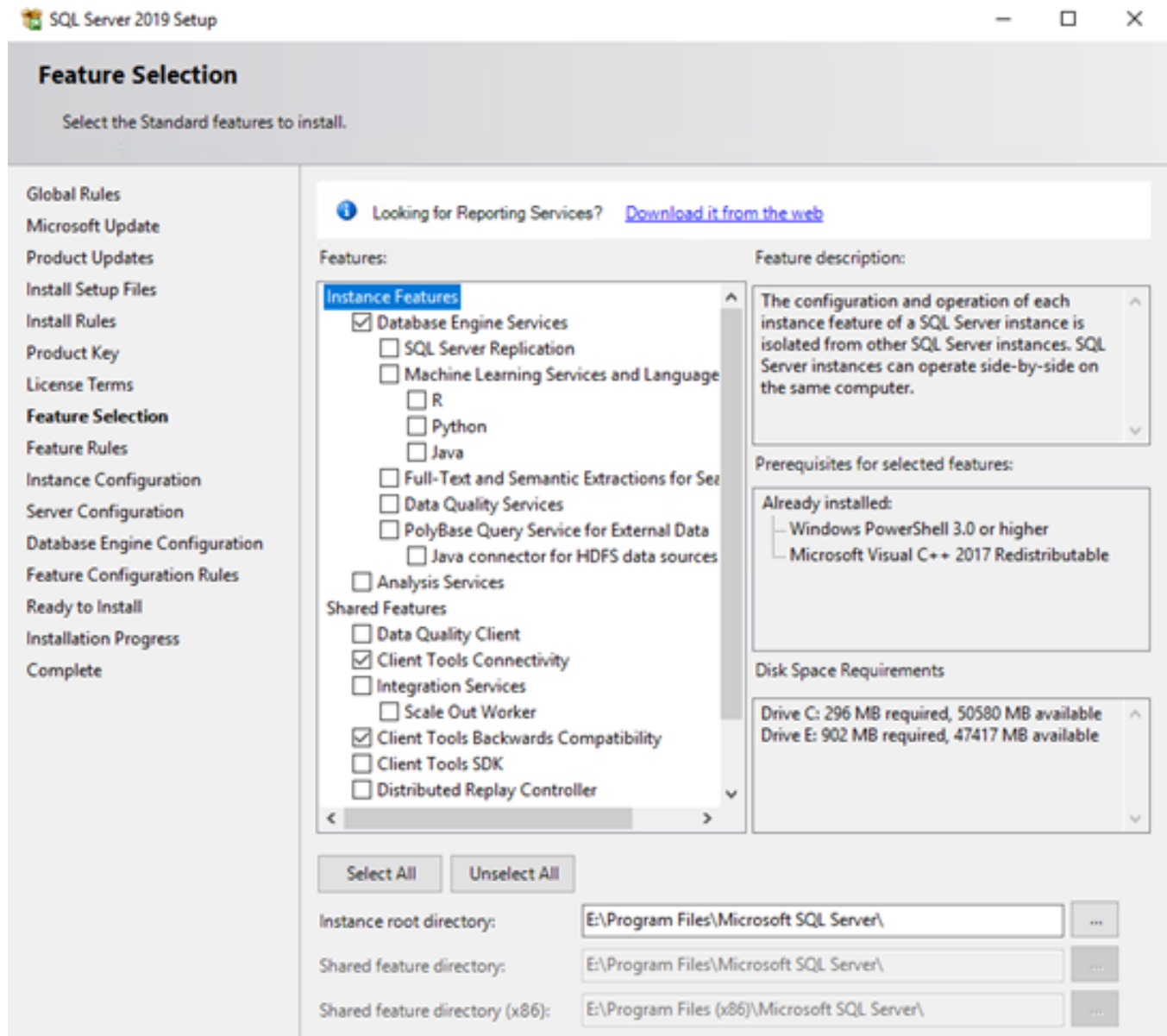


5. Accept the license terms and click **Next**.



6. Click **Feature Selection**, from the left panel and select the following:
- **Database Engine Services**
 - **SQL Server Replication** (only if the InAttend backup SQL server is used)
 - **Client Tools Connectivity**
 - **Client Tools Backwards Compatibility**

– Installation path for SQL server



7. Click **Instance Configuration** from the left panel and select **Default Instance**.

NOTE: Named Instances are not supported.

8. Click **Server Configuration** from the left panel and do the following:

a. In the **Service Account** tab:

- Set **Startup Type** of **SQL Server Agent** to **Automatic**.
- Set **Startup Type** of **SQL Server Database Agent** to **Automatic**
- Set **Startup Type** of **SQL Server Browser** to **Automatic**.

NOTE: Local NT account is created by CMG server setup, but can be changed to a domain account with local administrator rights on the server.

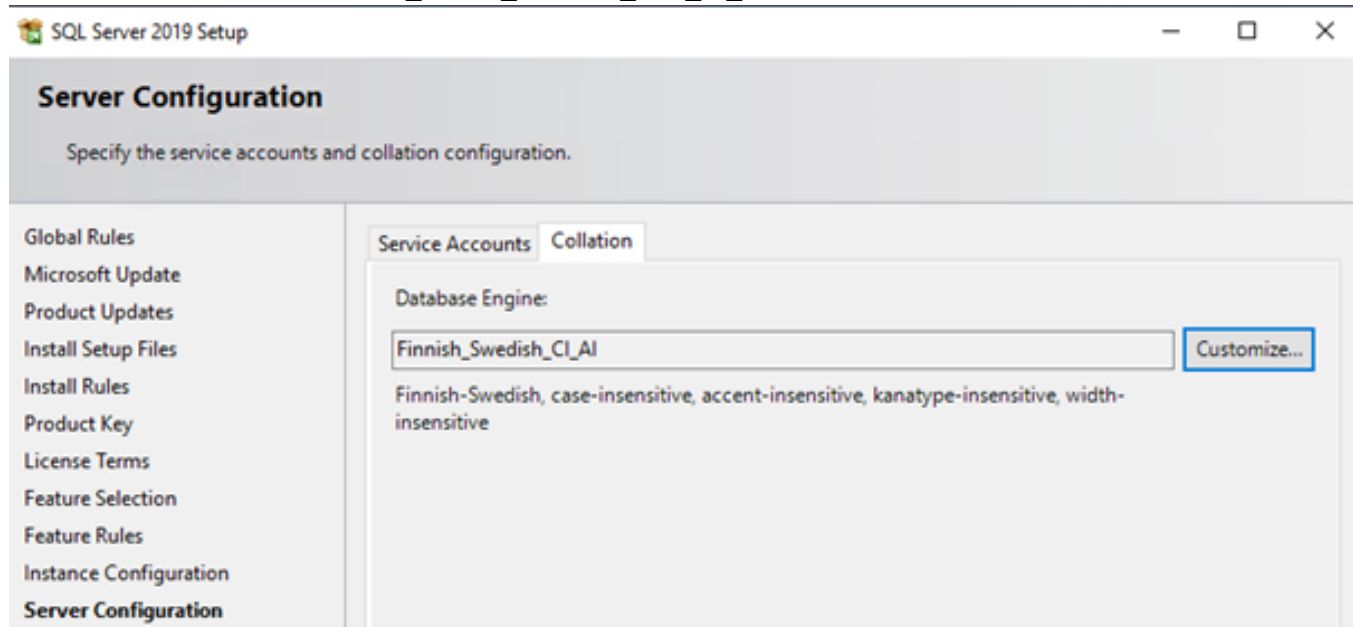
Service	Account Name	Password	Startup Type
SQL Server Agent	GTS\cmgsrv	*****	Automatic
SQL Server Database Engine	GTS\cmgsrv	*****	Automatic
SQL Server Browser	NT AUTHORITY\LOCAL ...		Automatic

b. Click the **Collation** tab:

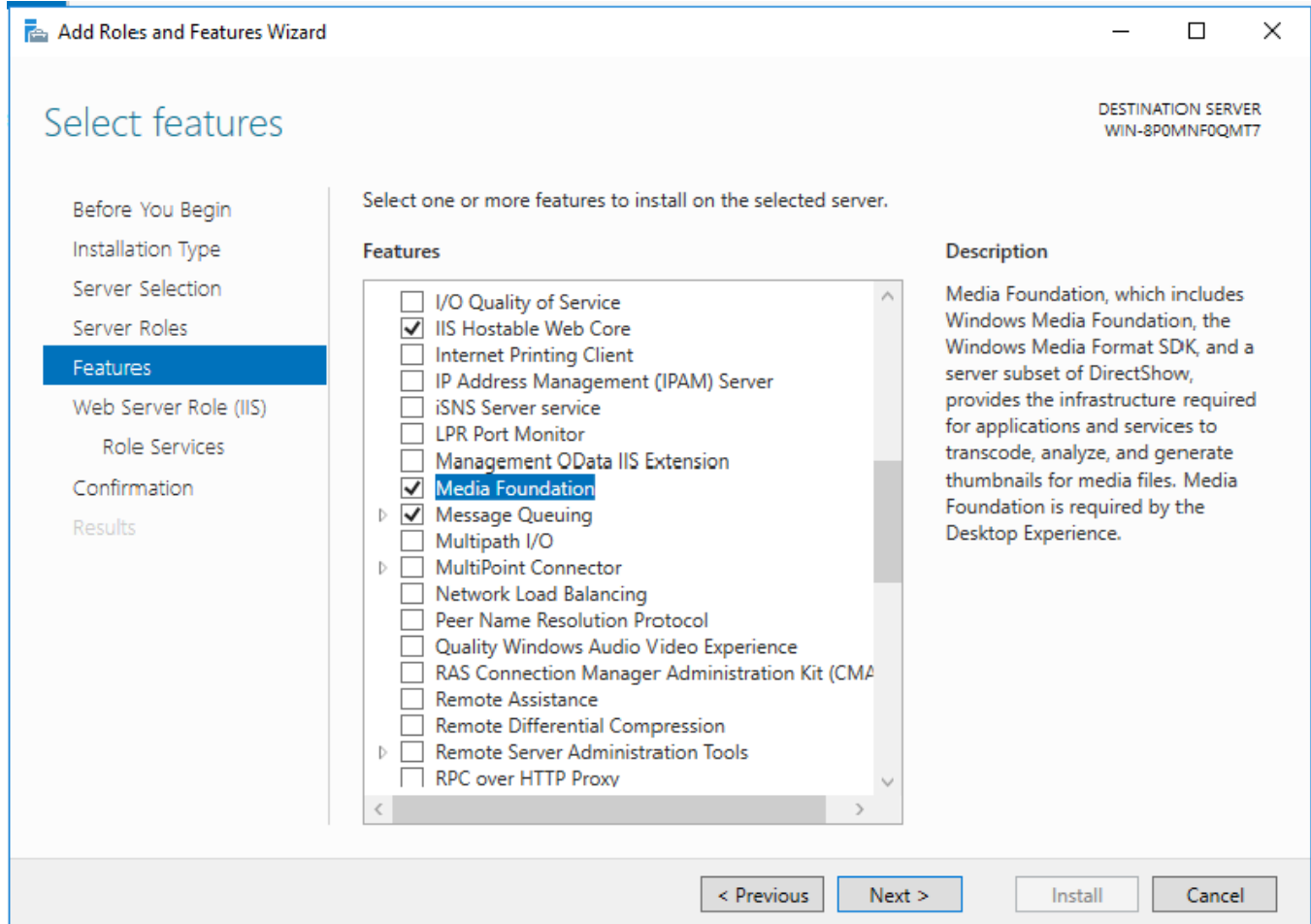
i. In the **Database Engine** field, select the appropriate designator from the list.

For example:

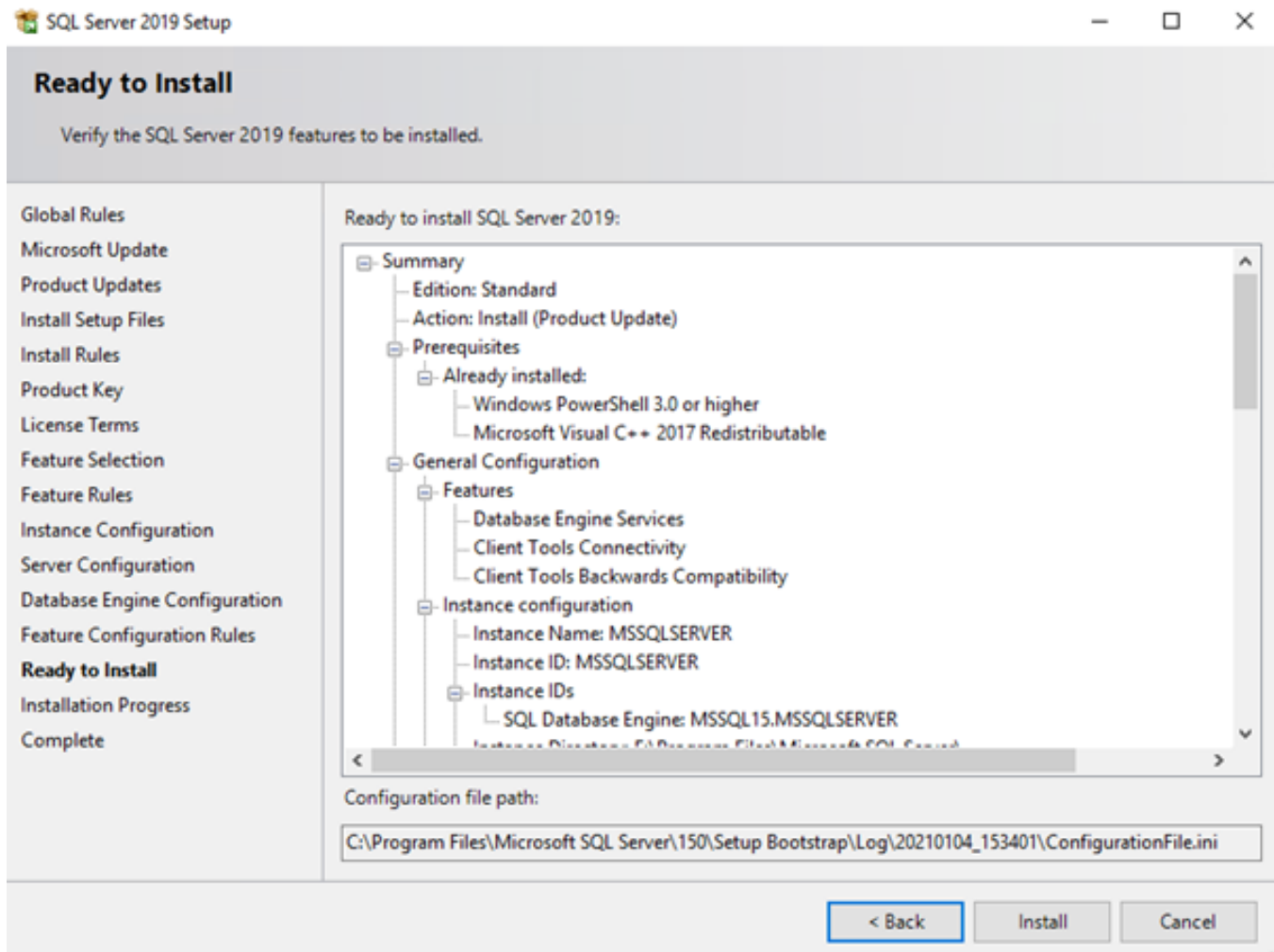
Sweden/Finland: Finnish_Swedish
Denmark/Norway: Danish_Norwegian
Default is SQL_Latin1_General_CP1_CI_AS



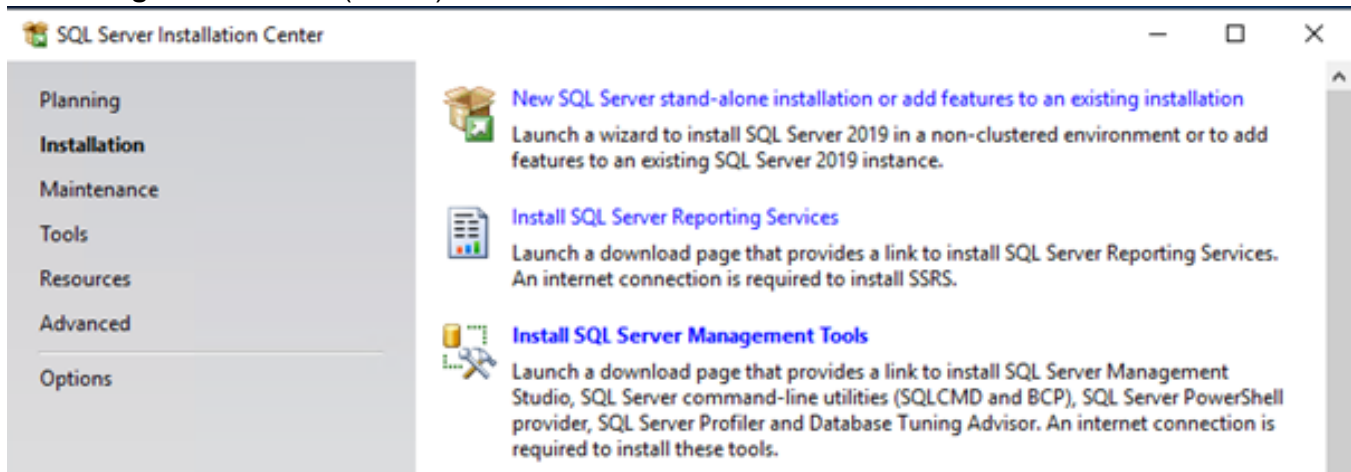
9. Click **Database Engine Configuration** from the left panel, select the **Server Configuration** tab, and do the following:
 - a. Select **Mixed Mode**.
 - b. Add the SQL server administrators.



10. Click **Install** and the installation of Server 2019 begins. Click **Finish** when done.



11. After installation, the tool connects to <http://docs.microsoft.com>. Download the latest **SQL Server Management Studio (SSMS)** version. Current version is 18.8.

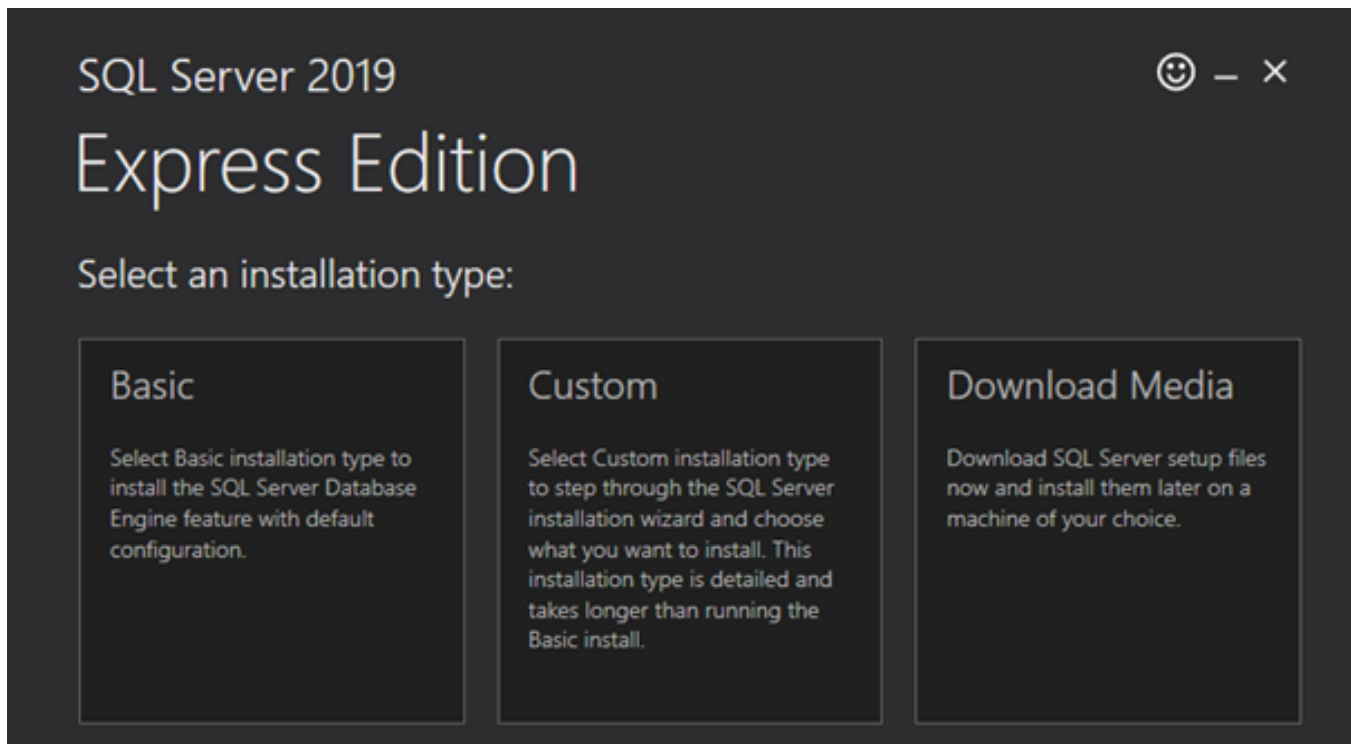


12. Verify that the following service keys are started:
 - a. SQL Server (MSSQLSERVER)
 - b. SQL Server Agent (MSSQLSERVER)
13. Open **SQL Server Configuration Manager** from the **Configuration Tools** folder installed with SQL Server 2019.
14. Expand **SQL Server Network Configuration**, and select **Protocols for MSSQLSERVER**.
15. Enable **Named Pipes** and **TCP/IP**.

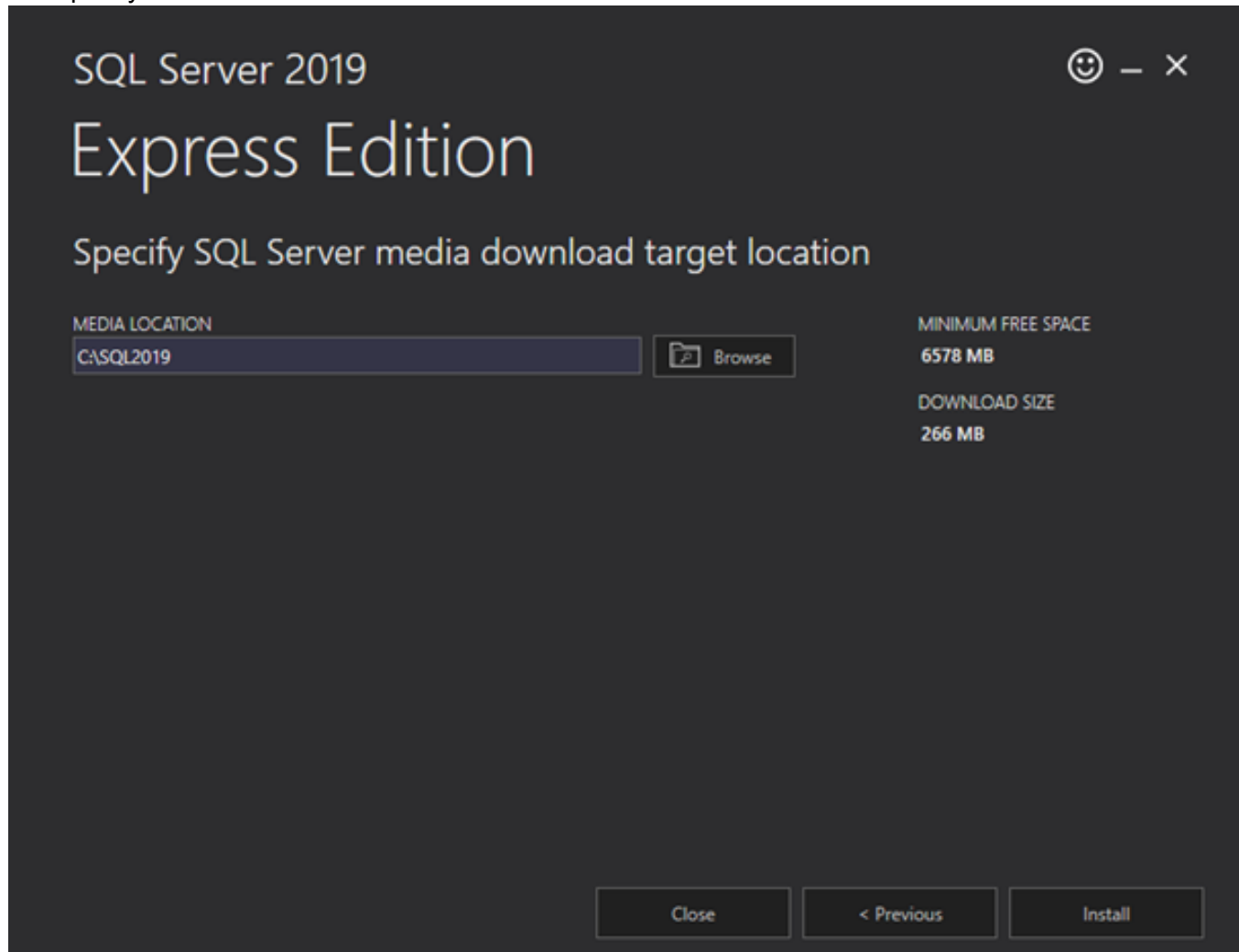
For SQL Express version, no product key is required. But the SQL Server Agent, although installed, will not run. Therefore, backup jobs need Task Scheduler and scripts to run.

To install SQL Express version:

1. Download the SQL Express version (SQL2019-SSEI-Expr) from Microsoft.
2. Run the setup as administrator.
3. Select **Custom**.



4. Specify **MEDIA LOCATION**.



5. Click **Install**. The rest of the installation procedure is the same as that described for SQL 2019 Standard.

VMware ESX Environment

This section describes important information for preparing the CMG Server to run in a VMware ESX environment. For requirements, see section 2.4 .

When a virtual machine or the CMG Server is created, ensure the following CPU and memory resources:

- **CPU Resources**

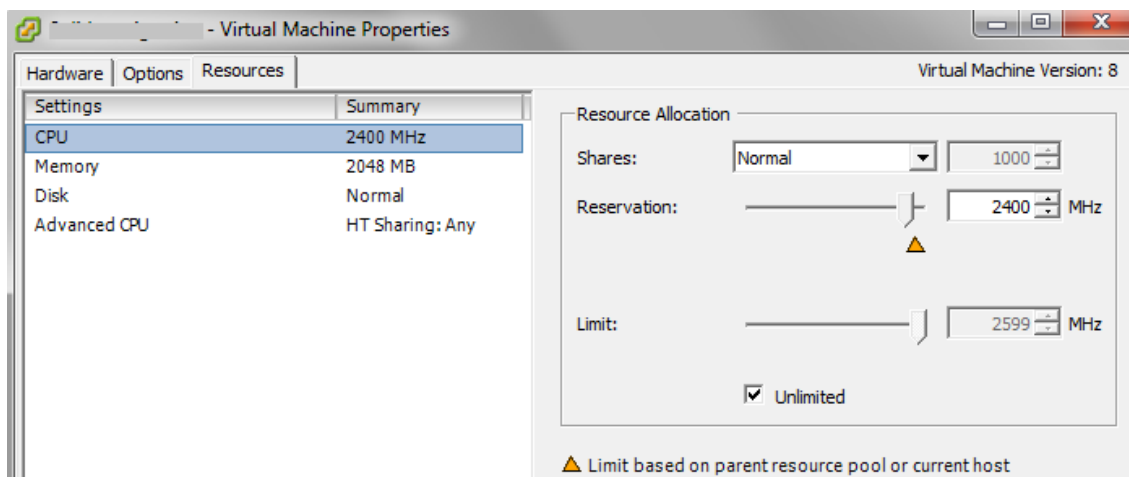
Set Shares to Normal, reserve at least 2400 MHz and set limit to Unlimited.

It is strongly recommended to set the CPU affinity to an exclusive processor or share this processor only with low performance virtual machines.

- **Memory Resources**

Set Shares to Normal, reserve at least 2048 MB and set limit to Unlimited.

Extend the specific resource pool if you plan to add one or more virtual InAttend Server to this pool.



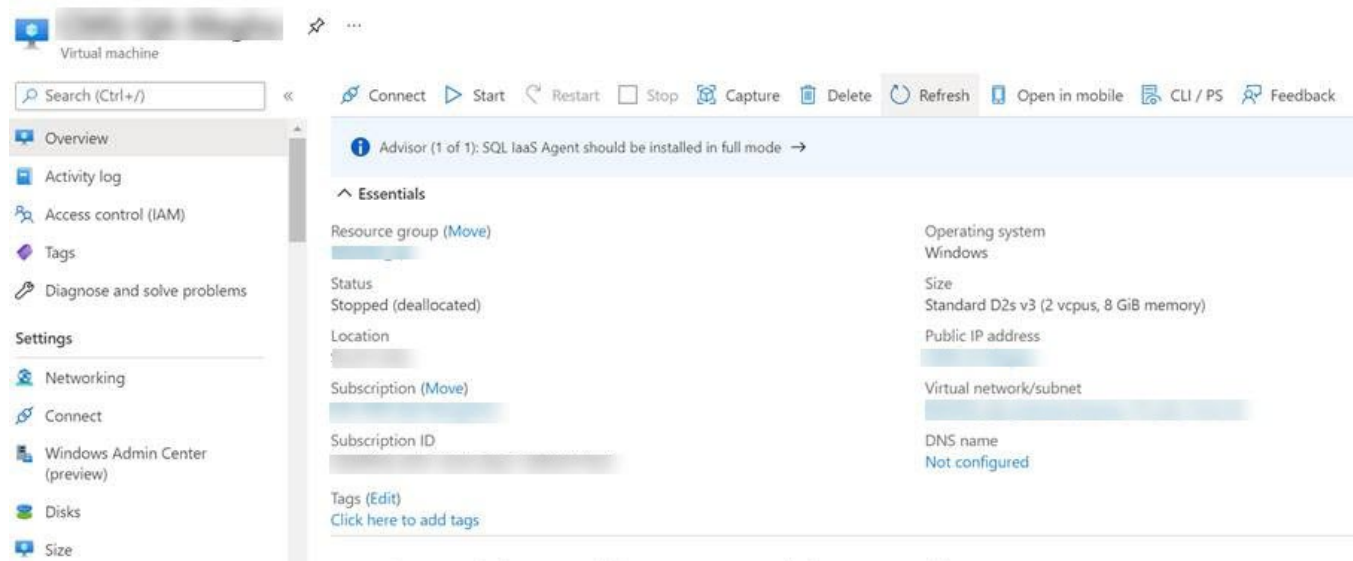
It is **strongly** recommended that any VMware-based installation be carried out by a VCP certified engineer. If you are not VMware certified, you should work with a VCP certified VMware partner or, alternatively, a VCP certified customer engineer during the InAttend installation in the VMware environment.

Azure Environment

This section describes important information for preparing the CMG Server to run in an Azure environment.

Ensure to have the following CPU and memory resources allocated for the resource in the Azure Environment:

- **CPU Resources:** Standard D2s v3 (2 vCPUs).
- **Memory Resources:** Reserve a memory of 8 GB in the **Size** field of the **Essentials** page as shown in the following image:



Azure Environment

Azure HCI Stack Environment

This section describes important information for preparing the CMG Server to run in a Azure HCI Stack environment.

When a virtual machine or the CMG Server is created, ensure that the following Azure HCI Stack Configuration, Disk Allocation, CPU and memory resources are allocated:

- **Azure HCI Stack Configuration**

Parameter	Value
Memory Assigned	8 GB
Dynamic Memory	Disabled
Status	Operating normally

The screenshot displays the Azure portal interface for managing virtual machines. On the left, a sidebar lists various tools and services, with 'Virtual machines' selected at the bottom. The main pane shows the configuration for a VM named 'T8091'. The 'Properties' tab is active, displaying a table of key metrics and settings. The 'Checkpoints' section is empty, and the 'Related' section shows a table of associated files.

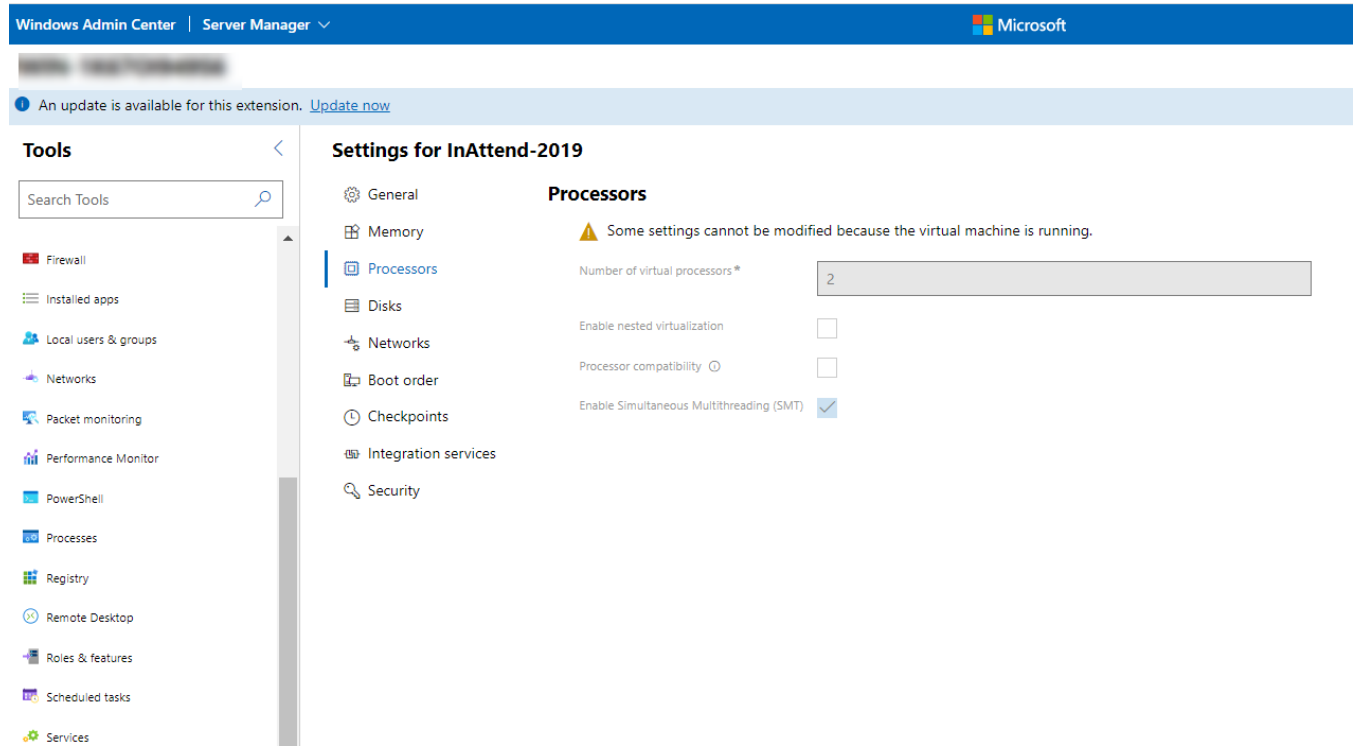
Properties				
State	Running	Host	Dynamic memory	Disabled
Uptime	0:19:49:28	Generation	1	Memory assigned
Virtual processors	2	Created	Jun 2, 2021, 12:18:57 AM	8 GB
Computer name	T8091	Operating system	Windows Server 2019 Datacenter	Memory demand
		Disaster Recovery status	Sign in to Azure	5.44 GB
		Operating system version		Status
		Integration services version		Operating normally

Checkpoints		
Name	Created	Applied
No records found		

Related			
Name	File path	Size used	Type
InAttend-2019.rhdx		99.66 %	Dynamic

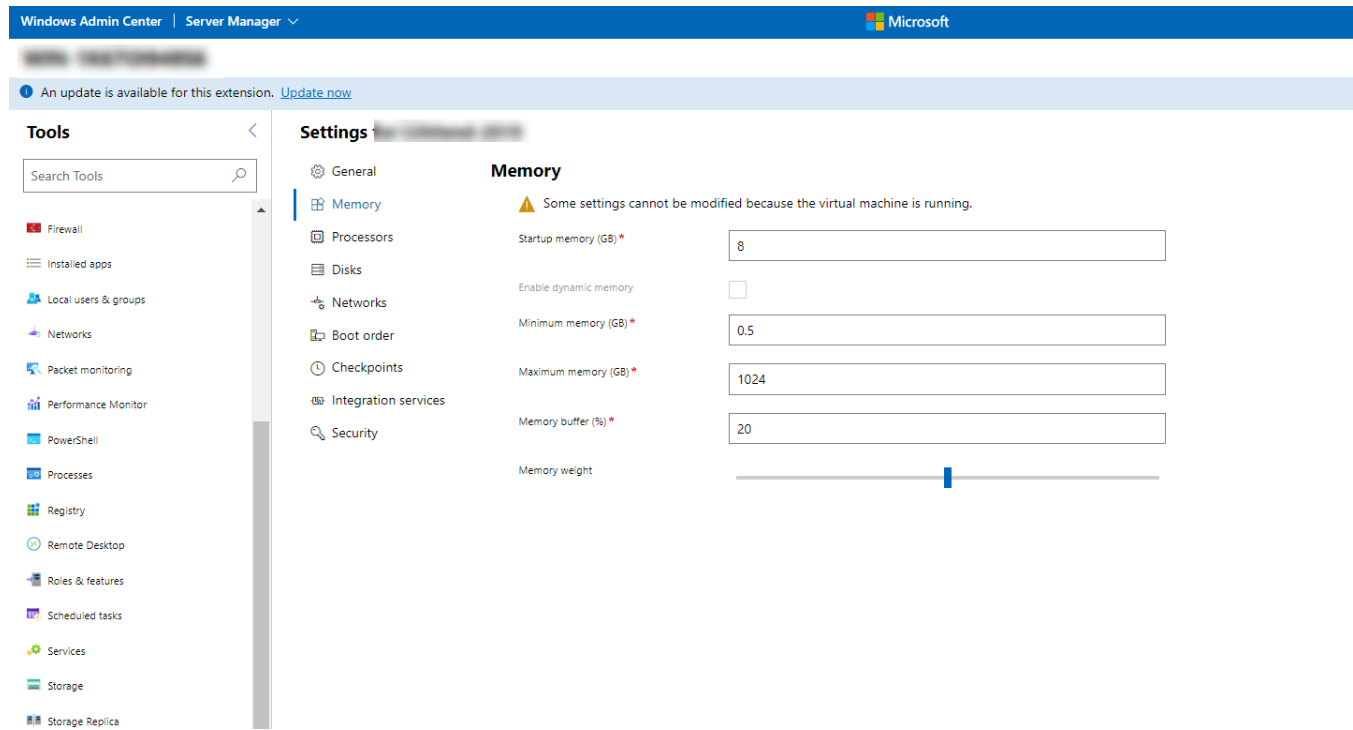
VM Configuration on Azure Environment

- **CPU Resources:** The number of processors required for the Azure HCI Stack environment are 2.



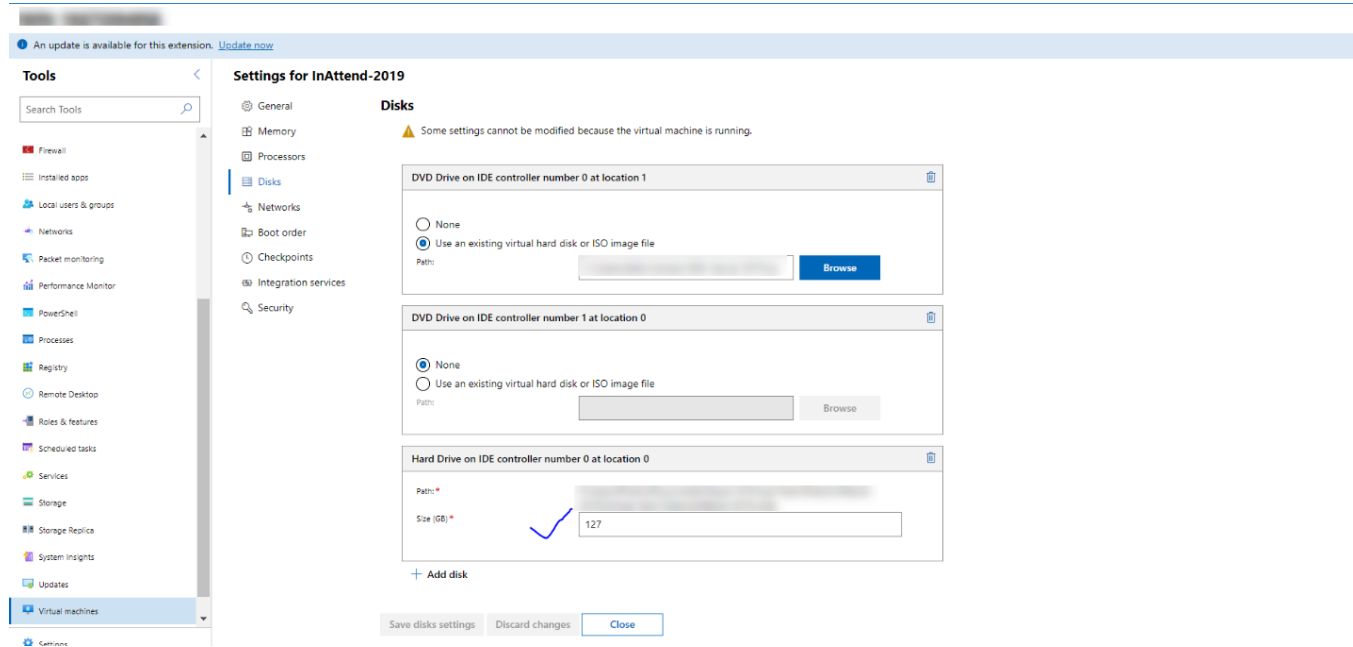
Azure HCI Stack Processor Requirements

- **Memory Resources:**
 - The Startup memory required is around 8 GB.
 - The minimum memory that can be allocated is 0.5 GB.
 - The maximum memory that can be allocated is 1024 GB.
 - The Memory buffer can vary in terms of percentage. The value taken in the following Memory Resources screenshot is 20.



Azure HCI Stack Memory Resource

- **Disk Allocation:** The Disk size allocated for Azure HCI Stack environment is 127 GB.



Azure HCI Stack Disk Space Allocation

Technical Assistance

Mitel provides www.mitel.com as a starting point for technical assistance regarding all products, including the CMG application suite. From here, partners can obtain online documentation, FAQs, latest software updates and request further technical assistance.

References

- [1]Mitel Installer Overview
- [2]CMG Quick Installation Guide
- [3]CMG Installation Guide
- [4]CMG Configuration Guide
- [5]Calendar Connection Configuration Guide
- [6]Enterprise License Manager Technical Guide
- [7]CMG Compatibility Matrix (Note: available on InfoChannel)
- [8]CMG System Overview

