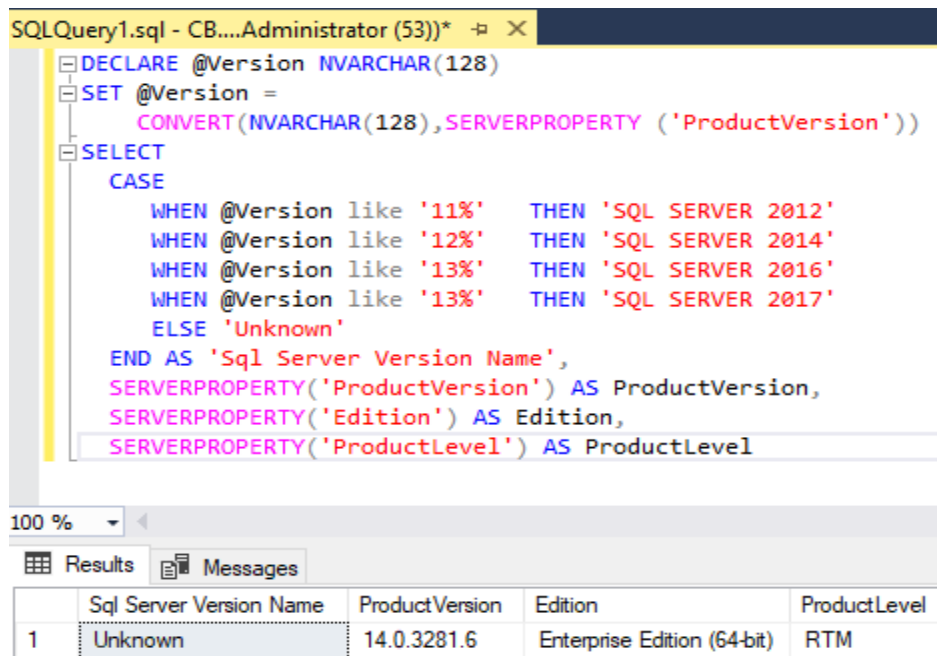
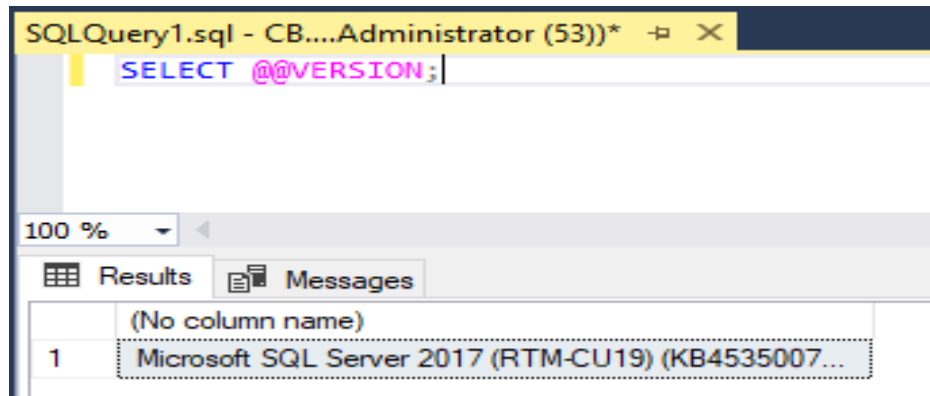


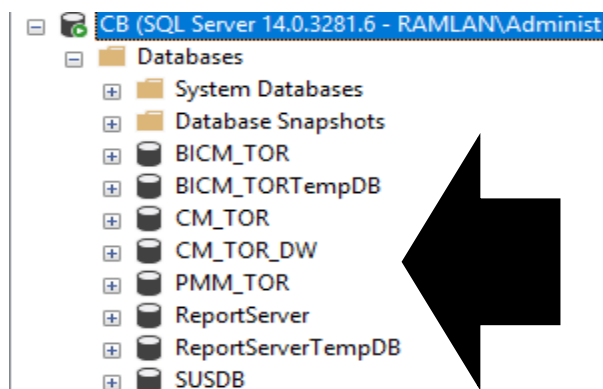
Upgrade SQL 2017 to SQL 2019

In this post, I will show you how to upgrade SQL Server 2017 CU19 to SQL Server 2019 CU4. I am currently running SQL 2017 Enterprise Version. The SQL Server is running on Microsoft Endpoint Configuration Manager (CB2002).

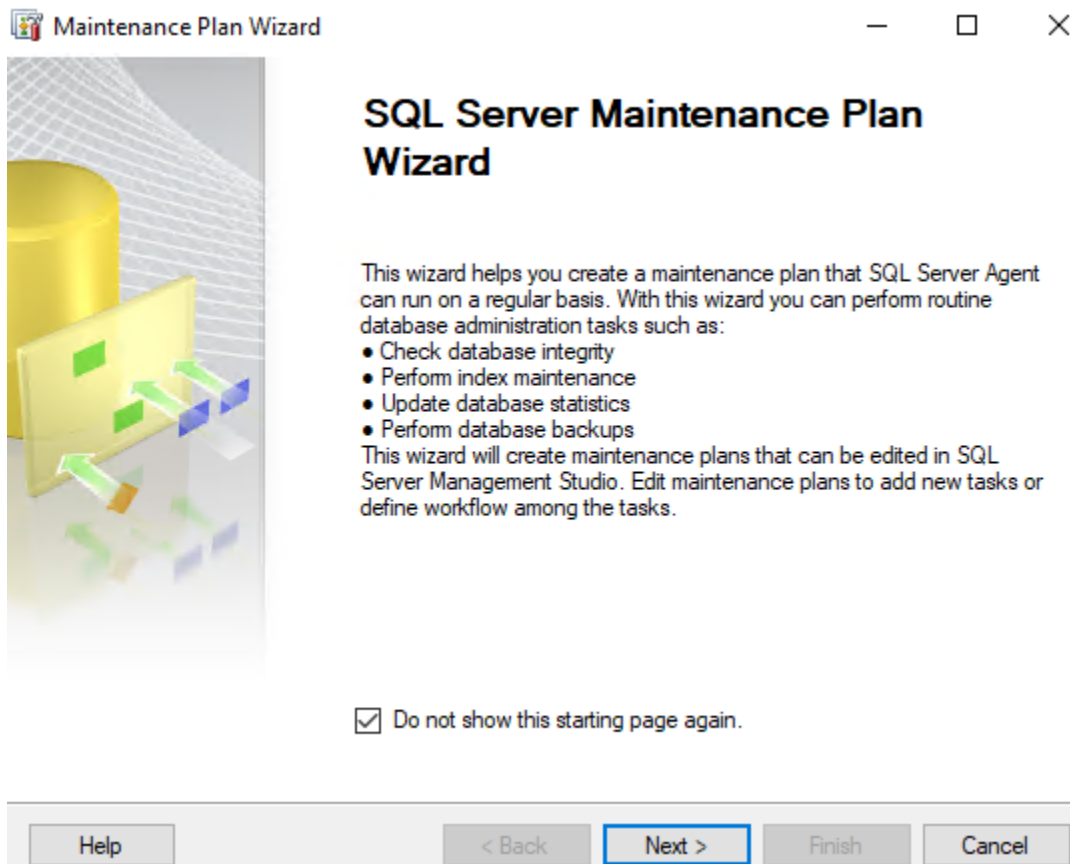
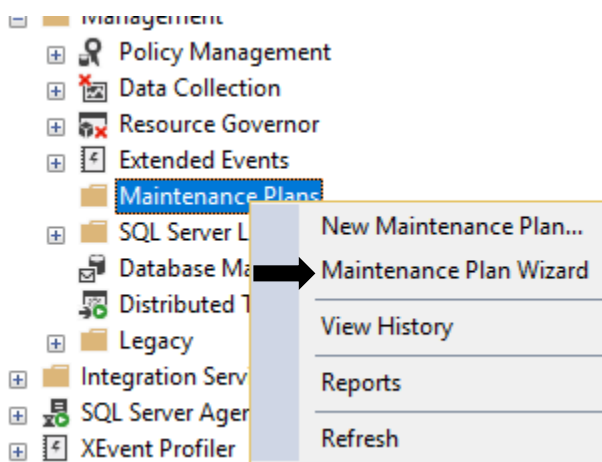
Here is the screen shot



To be safe, I will backup all the database. Following are some of the database within CB2002.



Will create Maintenance Plan.



Select Plan Properties

How do you want to schedule your maintenance tasks?



Name: CB2002

Description:

Run as:

SQL Server Agent service account

- ☐ Separate schedules for each task
☒ Single schedule for the entire plan or no schedule

Schedule:

Not scheduled (On Demand)

Change...

Help

< Back

Next >

Finish

Cancel

Select Maintenance Tasks

Which tasks should this plan perform?



Select one or more maintenance tasks:

- ☒ Check Database Integrity
- ☐ Shrink Database
- ☐ Reorganize Index
- ☐ Rebuild Index
- ☐ Update Statistics
- ☐ Clean Up History
- ☐ Execute SQL Server Agent Job
- ☒ Back Up Database (Full)
- ☐ Back Up Database (Differential)
- ☐ Back Up Database (Transaction Log)
- ☐ Maintenance Cleanup Task



The Check Database Integrity task performs internal consistency checks of the data and index pages within the database.

Help

< Back

Next >

Finish

Cancel

Select Maintenance Task Order

In which order should these tasks be performed?



Select the order for the tasks to execute:

Check Database Integrity
Back Up Database (Full)

Move Up...

Move Down...



The Check Database Integrity task performs internal consistency checks of the data and index pages within the database.

Help

< Back

Next >

Finish

Cancel

Define Database Check Integrity Task

Configure the maintenance task.



Databases:

Specific databases

- ☒ Include indexes
☒ Physical Only
☐ Tablock
☐ Max Degree of Parallelism

1

Schedule:

Not scheduled (On Demand)

Change...

Help

< Back

Next >

Finish >>

Cancel

- ☐ All databases
☐ System databases
☐ All user databases (excluding master, model, msdb, tempdb)

☒ These databases:

☒ BICM_TOR
☒ BICM_TORTempDB
☒ CM_TOR
☒ CM_TOR_DW
☒ master
☒ model
☒ msdb
☒ PMM_TOR
☒ ReportServer
☒ ReportServerTempDB
☒ SUSDB

☐ Ignore databases where the state is not online

OK

Cancel

Maintenance Plan Wizard

Define Back Up Database (Full) Task

Configure the maintenance task.

General Destination Options

Backup type: Full

Database(s): Specific databases

Backup component

☒ Database

☐ Files and filegroups:

Back up to: Disk

Schedule:

Not scheduled (On Demand) Change...

Help < Back Next > Finish >> Cancel

☐ All databases

☐ System databases

☐ All user databases (excluding master, model, msdb, tempdb)

☒ These databases:

<input checked="" type="checkbox"/>	BICM_TOR
<input checked="" type="checkbox"/>	BICM_TORTempDB
<input checked="" type="checkbox"/>	CM_TOR
<input checked="" type="checkbox"/>	CM_TOR_DW
<input checked="" type="checkbox"/>	master
<input checked="" type="checkbox"/>	model
<input checked="" type="checkbox"/>	msdb
<input checked="" type="checkbox"/>	PMM_TOR
<input checked="" type="checkbox"/>	ReportServer
<input checked="" type="checkbox"/>	ReportServerTempDB
<input checked="" type="checkbox"/>	SUSDB

☐ Ignore databases where the state is not online

OK Cancel

Maintenance Plan Wizard

Select Report Options

Select options for saving or distributing a report of the maintenance plan actions.

☒ Write a report to a text file

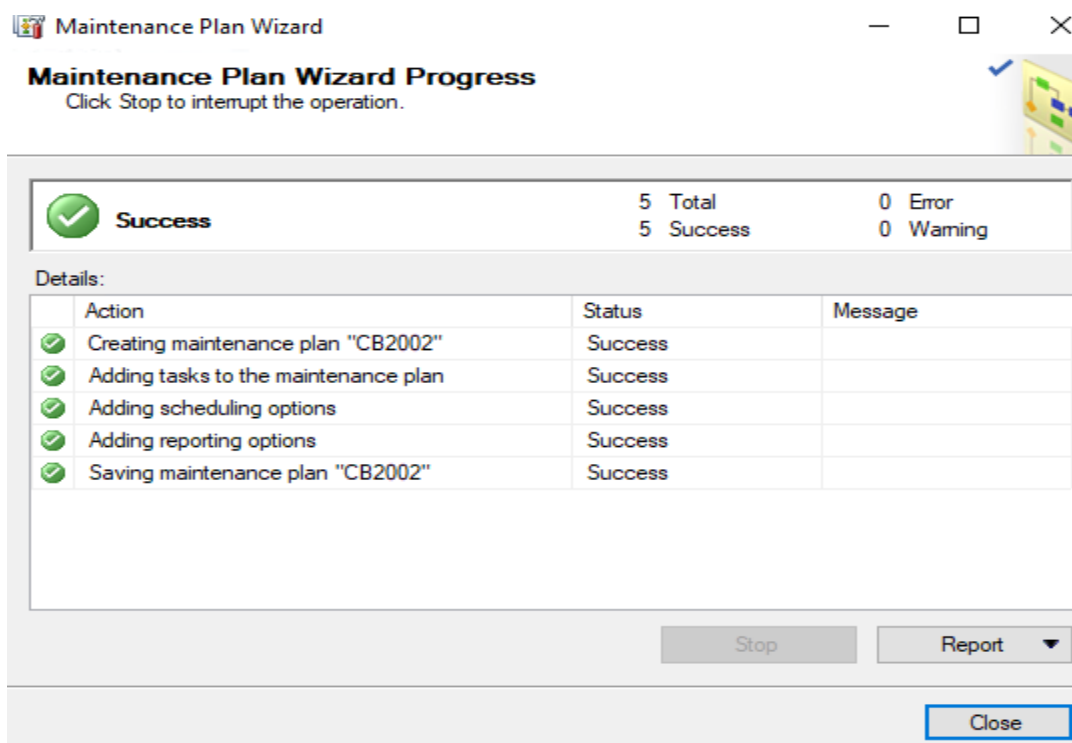
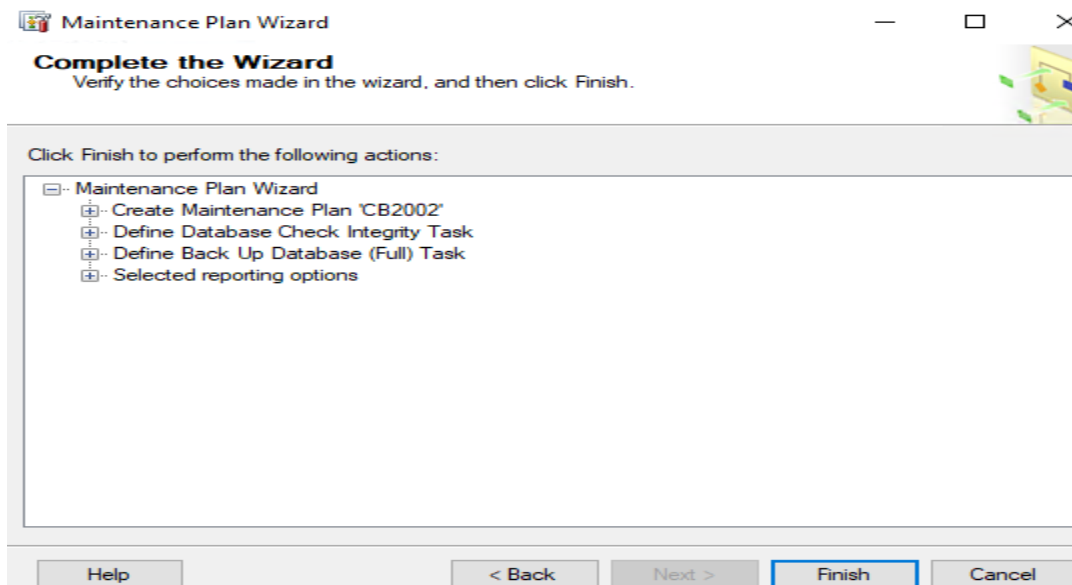
Folder location: C:\Temp\CBDB

☐ E-mail report

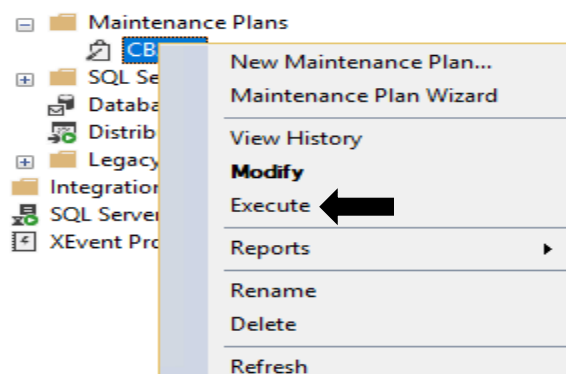
To:

There are no operators defined on the system.

Help < Back Next > Finish >> Cancel




Now execute MP




Execute Maintenance Plan

Status:

 **1 Remaining** 1 Total 0 Error
0 Success 0 Warning


Details:

Action	Status	Message
 Execute maintenance plan. CB2002	In progress...	


Stop Report ▼

Execute Maintenance Plan

Status:












 **Success** 1 Total 0 Error
1 Success 0 Warning

Details:

Action	Status	Message
 Execute maintenance plan. CB2002	Success	

Close Report ▼

OS (C:) > Program Files > Microsoft SQL Server > MSSQL14.MSSQLSERVER > MSSQL > Backup

Name	Date modified	Type	Size
 BICM TOR backup 2020 04 04 135204 8604667.bak	04-Apr-2020 1:52 ...	BAK File	20,571 KB
 BICM TORTempDB backup 2020 04 04 135204 8684457.bak	04-Apr-2020 1:52 ...	BAK File	4,119 KB
 CM TOR backup 2020 04 04 135204 8744401.bak	04-Apr-2020 1:52 ...	BAK File	3,078,862 KB
 CM TOR DW backup 2020 04 04 135204 8814359.bak	04-Apr-2020 1:52 ...	BAK File	1,639,545 KB
 master backup 2020 04 04 135204 8864333.bak	04-Apr-2020 1:52 ...	BAK File	4,059 KB
 model backup 2020 04 04 135204 8924325.bak	04-Apr-2020 1:52 ...	BAK File	2,841 KB
 msdb backup 2020 04 04 135204 8988505.bak	04-Apr-2020 1:52 ...	BAK File	24,691 KB
 PMM TOR backup 2020 04 04 135204 9040565.bak	04-Apr-2020 1:52 ...	BAK File	3,415 KB
 ReportServer backup 2020 04 04 135204 9100695.bak	04-Apr-2020 1:52 ...	BAK File	87,139 KB
 ReportServerTempDB backup 2020 04 04 135204 9160488.bak	04-Apr-2020 1:52 ...	BAK File	5,527 KB
 SUSDB backup 2020 04 04 135204 9220452.bak	04-Apr-2020 1:52 ...	BAK File	2,753,635 KB

SQLQuery3.sql - CB...dministrator (116)* MaintenancePlan CB2002 [Design]*

```

select
    p.name as 'Maintenance Plan'
    ,p.[description] as 'Description'
    ,p.[owner] as 'Plan Owner'
    ,sp.subplan_name as 'Subplan Name'
    ,sp.subplan_description as 'Subplan Description'
    ,j.name as 'Job Name'
    ,j.[description] as 'Job Description'
from msdb..sysmaintplan_plans p
    inner join msdb..sysmaintplan_subplans sp
    on p.id = sp.plan_id
    inner join msdb..sysjobs j
    on sp.job_id = j.job_id
where j.[enabled] = 1

```

100 %

Results Messages

	Maintenance Plan	Description	Plan Owner	Subplan Name	Subplan Description	Job Name	Job Description
1	CB2002	NULL	RAMLAN\Administrator	Subplan_1		CB2002.Subplan_1	No description available.









Now we can start the upgrade. Mount SQL Server 2019 ISO.

CB > DVD Drive (E:) SQL2016_x64_ENU >

Name	Date modified	Type	Size
1033 ENU LP	24-Sep-2019 11:51...	File folder	
redist	24-Sep-2019 11:15...	File folder	
resources	24-Sep-2019 10:09...	File folder	
Tools	25-Sep-2019 12:28...	File folder	
x64	25-Sep-2019 6:46 ...	File folder	
autorun.inf	24-Sep-2019 10:32...	Setup Information	1 KB
MedialInfo.xml	24-Sep-2019 10:32...	XML Document	1 KB
setup.exe	24-Sep-2019 10:32...	Application	124 KB
setup.exe.config	24-Sep-2019 10:32...	XML Configuratio...	1 KB
SqlSetupBootstrapper.dll	24-Sep-2019 10:32...	Application extens...	216 KB

SQL Server Installation Center

- Planning
- Installation**
- Maintenance
- Tools
- Resources
- Advanced
- Options

-  [New SQL Server stand-alone installation or add features to an existing installation](#)
Launch a wizard to install SQL Server 2019 in a non-clustered environment or to add features to an existing SQL Server 2019 instance.
-  [Install SQL Server Reporting Services](#)
Launch a download page that provides a link to install SQL Server Reporting Services. An internet connection is required to install SSRS.
-  [Install SQL Server Management Tools](#)
Launch a download page that provides a link to install SQL Server Management Studio, SQL Server command-line utilities (SQLCMD and BCP), SQL Server PowerShell provider, SQL Server Profiler and Database Tuning Advisor. An internet connection is required to install these tools.
-  [Install SQL Server Data Tools](#)
Launch a download page that provides a link to install SQL Server Data Tools (SSDT). SSDT provides Visual Studio integration including project system support for Microsoft Azure SQL Database, the SQL Server Database Engine, Reporting Services, Analysis Services and Integration Services. An internet connection is required to install SSDT.
-  [New SQL Server failover cluster installation](#)
Launch a wizard to install a single-node SQL Server 2019 failover cluster. This action is only available in the clustered environment.
-  [Add node to a SQL Server failover cluster](#)
Launch a wizard to add a node to an existing SQL Server 2019 failover cluster. This action is only available in the clustered environment.
-  [Upgrade from a previous version of SQL Server](#)
Launch a wizard to upgrade a previous version of SQL Server to SQL Server 2019.
[Click here to first view Upgrade Documentation](#)
-  [New Machine Learning Server \(Standalone\) installation](#)
Launch a wizard to install Machine Learning Server (Standalone) on a Windows machine. This is typically used by data scientists as a standalone analysis server or as a SQL Server Machine Learning Services client.

Microsoft SQL Server 2019

Product Key

Specify the edition of SQL Server 2019 to install.

Product Key

License Terms
Global Rules
Product Updates
Install Setup Files
Upgrade Rules
Select Features
Feature Rules
Ready to Upgrade
Upgrade Progress
Complete

Validate this instance of SQL Server 2019 by entering the 25-character key from the Microsoft certificate of authenticity or product packaging. You can also specify a free edition of SQL Server: Developer, Evaluation, or Express. Evaluation has the largest set of SQL Server features, as documented in SQL Server Books Online, and is activated with a 180-day expiration. Developer edition does not have an expiration, has the same set of features found in Evaluation, but is licensed for non-production database application development only. To upgrade from one installed edition to another, run the Edition Upgrade Wizard.

☐ Specify a free edition:

Evaluation

☒ Enter the product key:

< Back

Next >

Cancel

License Terms

To install SQL Server 2019, you must accept the Microsoft Software License Terms.

Product Key

License Terms

Global Rules
Product Updates
Install Setup Files
Upgrade Rules
Select Features
Feature Rules
Ready to Upgrade
Upgrade Progress
Complete

MICROSOFT SOFTWARE LICENSE TERMS

MICROSOFT SQL SERVER 2019 ENTERPRISE

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Notice: A paid SQL Server edition product key has been provided for the current action - Enterprise. Please ensure you are entitled to this SQL Server edition with proper licensing in place for the product key (edition) supplied.

SQL Server transmits information about your installation experience, as well as other usage and performance data, to Microsoft to help improve the product. To learn more about data processing and privacy controls, and to turn off the collection of this information after installation, see the [documentation](#).

< Back

Next >

Cancel

Select Instance

Specify the instance of SQL Server to modify.

Product Key
License Terms
Global Rules
Product Updates
Install Setup Files
Upgrade Rules
Select Instance
Select Features
Feature Rules
Ready to Upgrade
Upgrade Progress
Complete

Select the instance of SQL Server to upgrade. To upgrade only shared features, select "Upgrade shared features" and then click next.

Instance to upgrade:

MSSQLSERVER

Installed instances:

Instance Name	Instance ID	Features	Edition	Version
MSSQLSERVER	MSSQL14.MSSQLS...	SQLEngine	Enterprise	14.0.3281.6

< Back

Next >

Cancel

Select Features

It is not possible to change the SQL Server features to be upgraded in this release.

Product Key
License Terms
Global Rules
Product Updates
Install Setup Files
Upgrade Rules
Select Instance
Select Features
Instance Configuration
Feature Rules
Ready to Upgrade
Upgrade Progress
Complete

Features:

MSSQLSERVER

☒ Database Engine Services

Shared Features

☒ SQL Client Connectivity SDK

Redistributable Features

Description:

Prerequisites for selected features:

Already installed:

Windows PowerShell 3.0 or hig
Microsoft Visual C++ 2017 Red

Disk Space Requirements

Drive C: 1025 MB required, 648356
MB available

< Back

Next >

Cancel

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
Product Updates
Install Setup Files
Upgrade Rules
Select Instance
Select Features
Instance Configuration
Feature Rules
Ready to Upgrade
Upgrade Progress
Complete

☐ Default instance

☒ Named instance: MSSQLSERVER

Instance ID: MSSQLSERVER

SQL Server directory: C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER

Installed instances:

Instance Name	Instance ID	Features	Edition	Version
MSSQLSERVER	MSSQL14.MSSQLS...	SQLEngine	Enterprise	14.0.3281.6

< Back

Next >

Cancel

Ready to Upgrade

Verify the SQL Server 2019 features to be upgraded.

Product Key
License Terms
Global Rules
Product Updates
Install Setup Files
Upgrade Rules
Select Instance
Select Features
Instance Configuration
Feature Rules
Ready to Upgrade
Upgrade Progress
Complete

Ready to upgrade SQL Server 2019:

- Summary
 - Edition: Enterprise
 - Action: Upgrade (Product Update)
- Prerequisites
 - Already installed:
 - Windows PowerShell 3.0 or higher
 - Microsoft Visual C++ 2017 Redistributable
- General Configuration
 - Features
 - Database Engine Services
 - SQL Client Connectivity SDK
 - SQL Client Connectivity
 - SQL Browser
 - SQL Writer
 - Instance configuration
 - Instance Name: MSSQLSERVER
 - Instance Directory: C:\Program Files\Microsoft SQL Server
 - Shared component root directory
 - Shared feature directory: C:\Program Files\Microsoft SQL Server\
 - Shared feature (WOW64) directory: C:\Program Files (x86)\Microsoft SQL Server\
 - Product Update
 - Update Enabled: True
 - Update Source: MU

Configuration file path:

C:\Program Files\Microsoft SQL Server\150\Setup Bootstrap\Log\20200404_143111\ConfigurationFile.ini

< Back

Upgrade

Cancel

Computer restart required



One or more affected files have operations pending. You must restart your computer after the setup process is completed.



Copy message

OK



Upgrade to SQL Server 2019



Complete

Your SQL Server 2019 upgrade completed successfully with product updates.

Product Key

License Terms

Global Rules

Product Updates

Install Setup Files

Upgrade Rules

Select Instance

Select Features

Instance Configuration

Feature Rules

Ready to Upgrade

Upgrade Progress

Complete

Information about the Setup operation or possible next steps:

Feature	Status
✓ Database Engine Services	Succeeded
✓ SQL Browser	Succeeded
✓ SQL Writer	Succeeded
✓ SQL Client Connectivity SDK	Succeeded
✓ SQL Client Connectivity	Succeeded
✓ Setup Support Files	Succeeded

Details:

Install successful.

Summary log file has been saved to the following location:

C:\Program Files\Microsoft SQL Server\150\Setup Bootstrap\Log\20200404_143111\Summary CB_20200404_143111.txt

Close

Had to restart the server after the upgrade. Now will login to SSMS and see everything is OK!

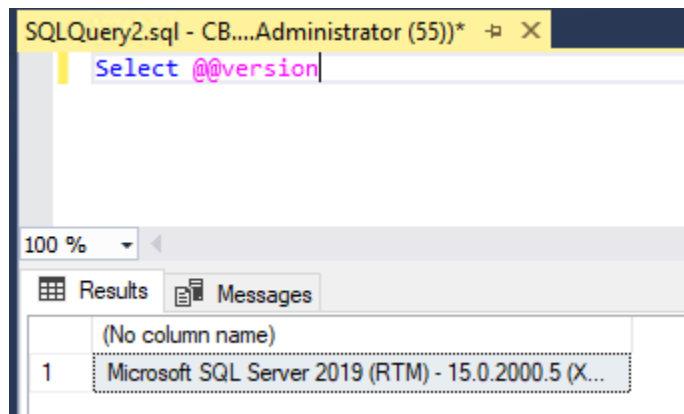
SQL Product Versio...Administrator (70) -> X

```
SELECT
SERVERPROPERTY('productversion') as 'Product Version',
SERVERPROPERTY('productlevel') as 'Product Level',
SERVERPROPERTY('edition') as 'Product Edition',
SERVERPROPERTY('buildclrversion') as 'CLR Version',
SERVERPROPERTY('collation') as 'Default Collation',
SERVERPROPERTY('instancename') as 'Instance',
SERVERPROPERTY('lcid') as 'LCID',
SERVERPROPERTY('servername') as 'Server Name'
```

100 %

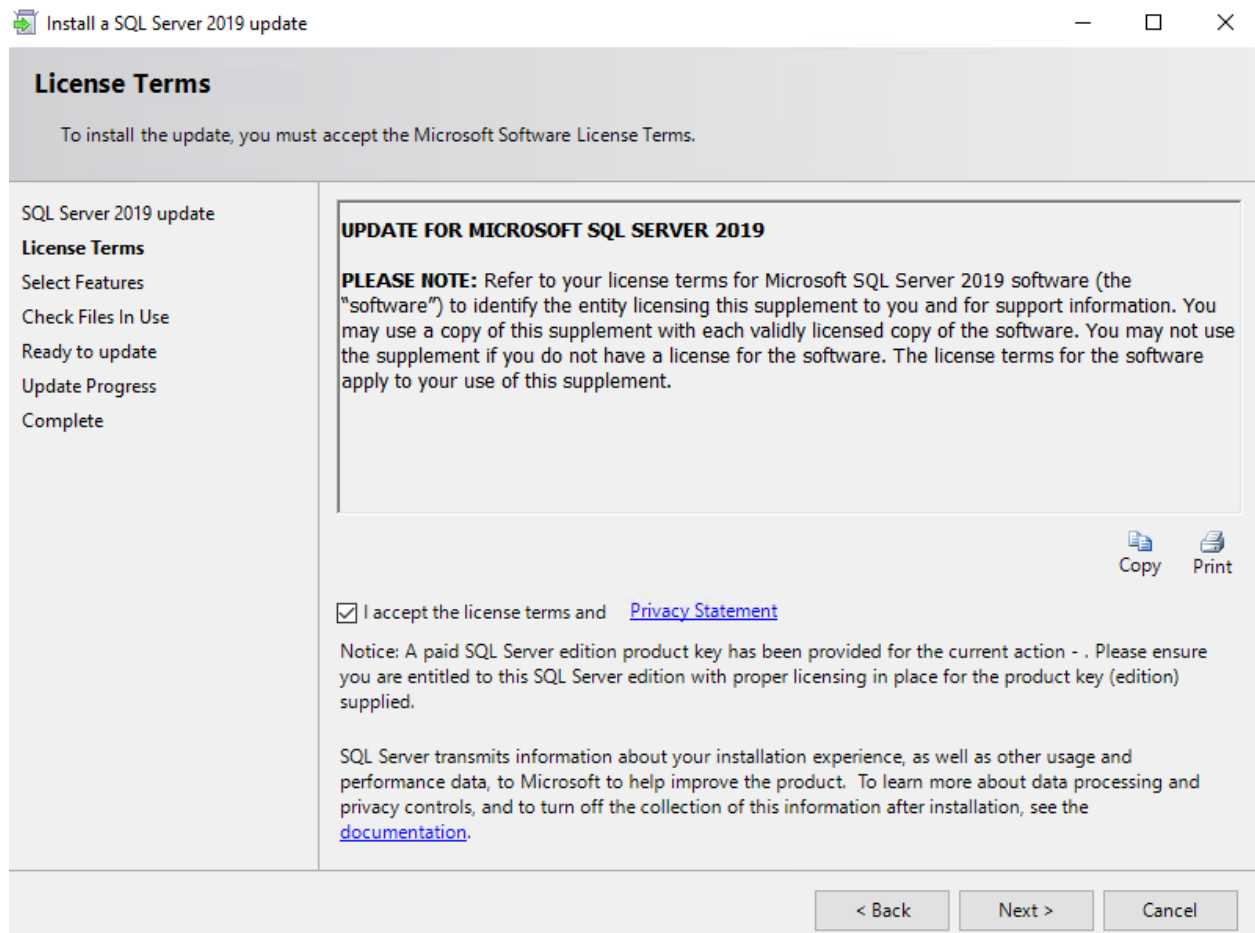
Results Messages

	Product Version	Product Level	Product Edition	CLR Version	Default Collation	Instance	LCID	Server Name
1	15.0.2000.5	RTM	Enterprise Edition (64-bit)	v4.0.30319	SQL_Latin1_General_CP1_CI_AS	NULL	1033	CB



Now we will install CU4

Name	Date modified	Type	Size
en_sql_server_2019_enterprise_x64_dvd_46f0ba38.iso	01-Oct-2019 2:25 ...	Disc Image File	1,393,286 KB
SQLServer2019-KB4548597-x64.exe	04-Apr-2020 1:17 ...	Application	585,545 KB
SSMS 18.4.exe	04-Apr-2020 2:24 ...	Application	551,535 KB



Select Features

Specify the features to update.

SQL Server 2019 update

License Terms

Select Features

Check Files In Use

Ready to update

Update Progress

Complete

Instances:

- ☒ MSSQLSERVER
 - Database Engine Services
- ☒ Shared Features
 - SQL Client Connectivity SDK

Select All

Unselect All

Description:

Language:

Edition:

Patch Level:

Architecture:

Service Pack:

Upgrade Status:

< Back

Next >

Cancel

Check Files In Use

The following services and applications are using files that Setup needs to complete the installation. To avoid a computer restart, stop the applications and services.

SQL Server 2019 update

License Terms

Select Features

Check Files In Use

Ready to update

Update Progress

Complete

Files in use check completed.

Stop check

Refresh check

Process	Type	Account	ProcessID
RSPowerBI.exe	Application	NT SERVICE\PowerBIRE...	8976
WmiPrvSE.exe	Application	NT AUTHORITY\SYSTEM	5560
w3wp.exe	Application	NT AUTHORITY\NETW...	6352
ReportingServicesServic...	Application	RAMLAN\Administrator	8728
RSPortal.exe	Application	RAMLAN\Administrator	8736
ReportingServicesServic...	Application	NT SERVICE\PowerBIRE...	8960
RSPortal.exe	Application	NT SERVICE\PowerBIRE...	8968
microsoft.management...	Application	NT AUTHORITY\NETW...	14596
MonitoringHost.exe	Application	NT AUTHORITY\SYSTEM	13824

The 'RSPowerBI.exe' process is not controlled by the update wizard. You have to manually stop this process to avoid a computer restart.

< Back

Next >

Cancel

Verify the list of features to be updated.

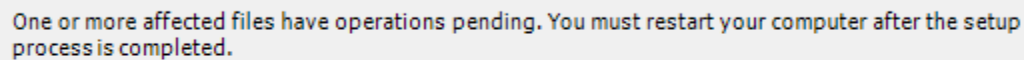
Complete

```

graph TD
    Summary[Summary] --> Action[Action: Patch]
    Action --> General[General Configuration]
    General --> MSSQLSERVER[MSSQLSERVER]
    MSSQLSERVER --> Features1[Features]
    Features1 --> DBES[Database Engine Services]
    MSSQLSERVER --> Attributes1[Attributes]
    Attributes1 --> Lang1[Language: English - United States]
    Attributes1 --> Edition1[Edition: Enterprise]
    Attributes1 --> Patch1[Patch Level: 15.0.2000.5]
    Attributes1 --> Proc1[Processor Type: x64]
    Attributes1 --> SP1[Service Pack:]
    Attributes1 --> Upgrade1[Upgrade Status: Not installed.]
    MSSQLSERVER --> Shared[Shared Features]
    Shared --> Features2[Features]
    Features2 --> SDK[SQL Client Connectivity SDK]
    Shared --> Attributes2[Attributes]
    Attributes2 --> Lang2[Language:]
    Attributes2 --> Edition2[Edition:]
    Attributes2 --> Patch2[Patch Level: 15.0.2000.5]
    Attributes2 --> Proc2[Processor Type: x64]
    Attributes2 --> SP2[Service Pack:]
    Attributes2 --> Upgrade2[Upgrade Status: Not installed.]
  
```

Cancel

×



OK

Your SQL Server 2019 update operation is complete.

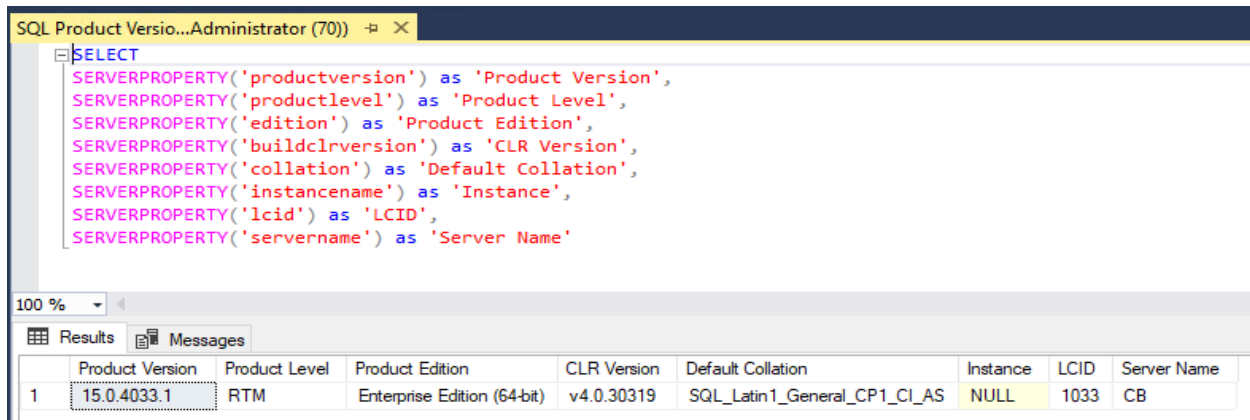
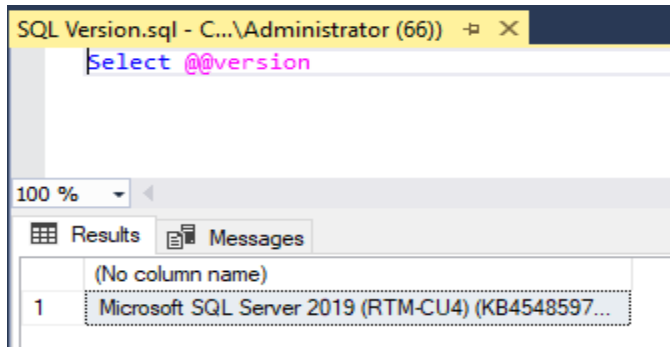
Complete

Feature	Status
Database Engine Services (MSSQLSERVER)	Succeeded
SQL Browser (MSSQLSERVER)	Succeeded
SQL Writer (MSSQLSERVER)	Succeeded
Setup Support Files (MSSQLSERVER)	Succeeded

[C:\Program Files\Microsoft SQL Server\150\Setup Bootstrap\Log\20200404_145501\Su
Summary CB_20200404_145501.txt](#)

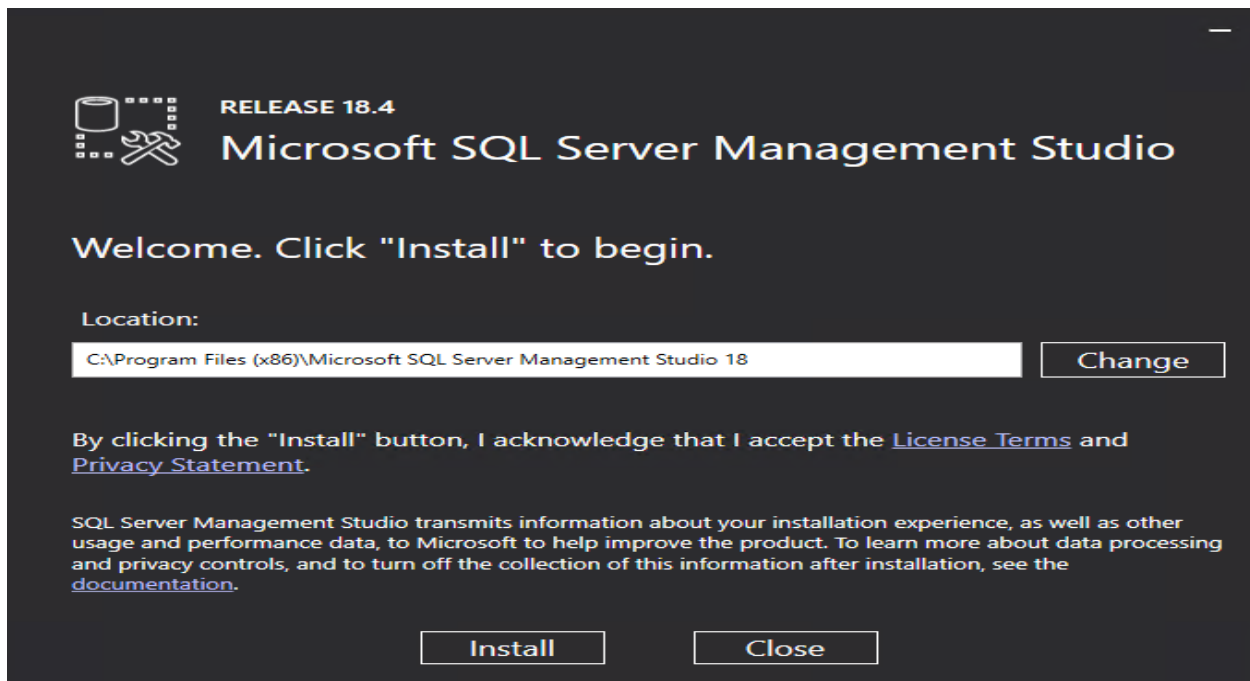
Close

Had to restart the server after the upgrade. Now will login to SSMS and see everything is OK!



Now we will upgrade Management Studio to Version 18.4

Name	Date modified	Type	Size
en_sql_server_2019_enterprise_x64_dvd_46f0ba38.iso	01-Oct-2019 2:25 ...	Disc Image File	1,393,286 KB
SQL Server2019-KB4548597-x64.exe	04-Apr-2020 1:17 ...	Application	585,545 KB
SSMS 18.4.exe	04-Apr-2020 2:24 ...	Application	551,535 KB





RELEASE 18.4

Microsoft SQL Server Management Studio

Restart required in order to complete setup.

All specified components have been installed successfully.

The computer needs to be restarted before setup can continue.

Restart

Close

Had to restart the server after the upgrade. Now will login to SSMS and see everything is OK!



Import User Settings



Would you like to import the SSMS user settings from SSMS 17?
If you do not import SSMS will load the default user settings.



Copy message

Import from SSMS 17

Do not import

Conversion of SSMS user settings



Success

1	Total	0	Error
1	Success	0	Warning

Details:

	Action	Status	Message
<input checked="" type="checkbox"/>	Migrate settings	Success	

Close

Report ▼

SQL Server Management Studio

v18.4

Component Name	Versions
SQL Server Management Studio	15.0.18206.0
Microsoft Analysis Services Client Tools	15.0.1567.0
Microsoft Data Access Components (MDAC)	10.0.17763.1
Microsoft MSXML	3.0 6.0
Microsoft Internet Explorer	9.11.17763.0
Microsoft .NET Framework	4.0.30319.42000
Operating System	10.0.17763

To copy component name and version information, click Copy Info.

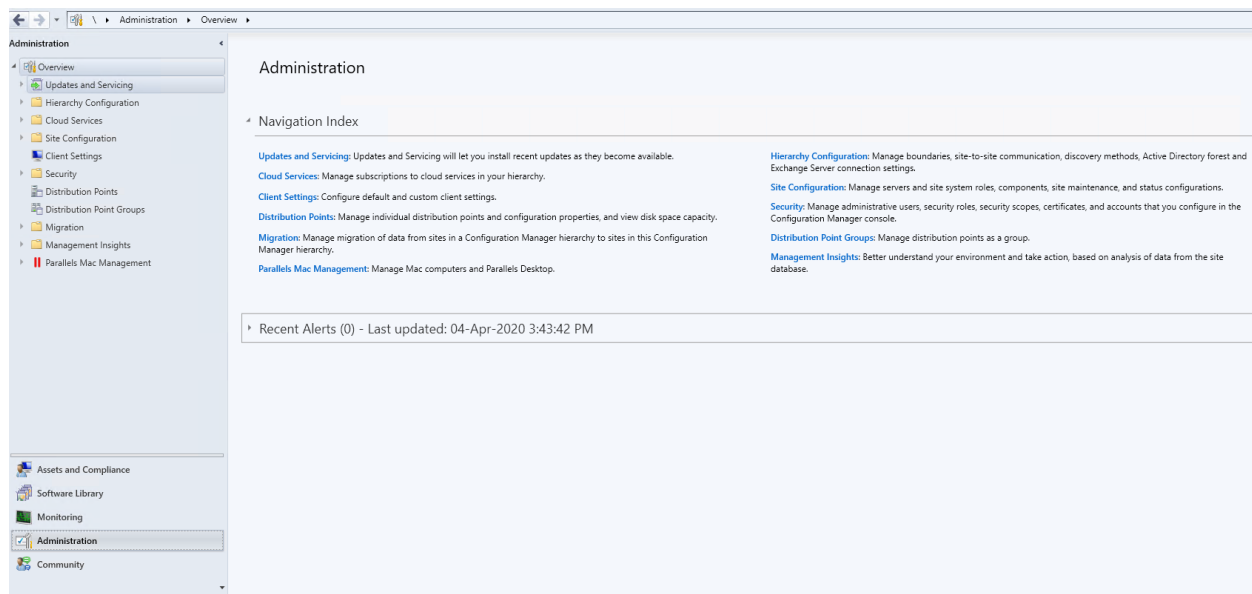
[Copy Info](#)

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[OK](#)

Now let us open Microsoft Endpoint Configuration Manager (CB2002) console



This concludes SQL 2017 to SQL 2019 upgrade. Later, I will create another post on how to upgrade SSRS 2017 to SSRS 2019.

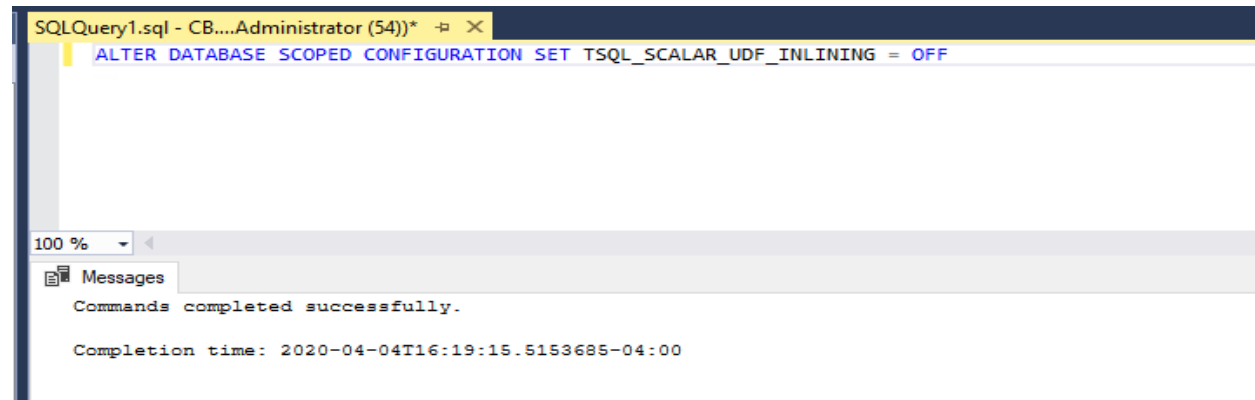
Thanks

Ram Lan

4th April 2020

Now let us complete below configuration to fix the error on SQL 2019 for CB2002 database.

ALTER DATABASE SCOPED CONFIGURATION SET TSQL_SCALAR_UDF_INLINING = OFF



The screenshot shows a SQL Server Enterprise Manager window titled "SQLQuery1.sql - CB....Administrator (54))". The main pane contains the SQL command: `ALTER DATABASE SCOPED CONFIGURATION SET TSQL_SCALAR_UDF_INLINING = OFF`. Below the command pane, the "Messages" pane shows the output: "Commands completed successfully." and "Completion time: 2020-04-04T16:19:15.5153685-04:00".

Known issue with SQL Server 2019

There's a known issue with the new [scalar UDF inlining](#) feature in SQL 2019. To work around this issue and disable UDF inlining, run the following script on the SQL 2019 server:

SQL

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```
ALTER DATABASE SCOPED CONFIGURATION SET TSQL_SCALAR_UDF_INLINING = OFF
```

While not always necessary, you may need to restart the SQL server after you run this script. For more information, see [Disabling Scalar UDF Inlining without changing the compatibility level](#).

You can safely disable this SQL feature for the site database server because Configuration Manager doesn't use it.