Standard Operating Procedures

Automated SQL Install

Version 0.1

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Purpose

The purpose of this document is to provide a guide to how to run the SQL automated scripts provided for SQL Server 2022. This will explain the steps to take when using the scripts, and what components need to be amended.

Prerequisites for Windows 2016 Environment

1. Please take a snapshot of the Virtual Machine prior to starting this process
2. You need to be running PowerShell in Administrator mode
3. Check for any new SQL patches that may need to be added to the script, best place to look is <https://sqlserverbuilds.blogspot.com/>
4. Set up the appropriate Service accounts in the correct active directory with the following setup, the password must be complicated and a minimum of 20 characters
   1. SQL Server Service Account <Server Name>\_SS
   2. SQL Server Agent Account <Server Name>\_AS
   3. Integration Services Account <Server Name>\_IS
   4. Analysis Services Account <Server Name>\_ANS
5. Pick the correct script, there will be number of different scripts for the database engine, analysis services and Integration Services, they will be:

**DB Engine (Both Default and Named instance)**

* 1. SQL Server 2022 Development Edition DB Engine Install - WIN 2016 OS Install.ps1
  2. SQL Server 2022 Standard Edition DB Engine Install - WIN 2016 OS Install.ps1
  3. SQL Server 2022 Enterprise Edition DB Engine Install - WIN 2016 OS Install.ps1
  4. SQL Server 2022 Development Edition DB Engine Install - InstanceEnabled - WIN 2016 OS Install.ps1
  5. SQL Server 2022 Standard Edition DB Engine Install - InstanceEnabled - WIN 2016 OS Install.ps1
  6. SQL Server 2022 Enterprise Edition DB Engine Install - InstanceEnabled - WIN 2016 OS Install.ps1

**Analysis Services**

* 1. SQL Server 2022 Development Edition Analysis Services Install - WIN 2016 OS Install.ps1
  2. SQL Server 2022 Standard Edition Analysis Services Install - WIN 2016 OS Install.ps1
  3. SQL Server 2022 Enterprise Edition Analysis Services Install - WIN 2016 OS Install.ps1

**Integration Services**

* 1. SQL Server 2022 Development Edition Integration Services Install - WIN 2016 OS Install.ps1
  2. SQL Server 2022 Standard Edition Integration Services Install - WIN 2016 OS Install.ps1
  3. SQL Server 2022 Enterprise Edition Integration Services Install - WIN 2016 OS Install.ps1

1. Run the following Prerequisites scripts
   1. The first prerequisite script lokks for a Temp folder in the C drive and if its not there it wil create oneText

      Description automatically generated
   2. This looks for the correct version of .Net framework which is 4.7 or above, and if its not here it will create it. This can take a while, and you will need to Check the license key box and install button.A picture containing chart

      Description automatically generated
2. Reboot the server when it asks you to.
3. **Do not change** the config file, it is set up ready to use for all cases.

Install SQL Server on a Default Instance for Windows 2016 Environment

You now need to copy the remainder of the script into PowerShell in Administrator mode to complete the prerequisites

1. The last prerequisite is to amend the variables
2. Port Number – To an appropriate potr number
3. SQL Server Account – Standard Server name plus \_SS
4. SQL Server Password – must be complicated and a minimum of 20 characters
5. SQL Server Agent Account – Standard Server name plus \_AS
6. SQL Server Agent Password – must be complicated and a minimum of 20 characters
7. Sys Admin (sa) Password – must be complicated and a minimum of 20 characters
8. Page File Initial Size & Page File Maximum Size minimum and maximum based on the size of the P drive (assuming there is one, if not delete these rows in your copied script).
9. Highlight the variables and the entirety of Part1 in the scripts and either press F8 or click on the run selection icon in PowerShell . If the script runs successfully, delete Part 1 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part2 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 2 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part3 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 3 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Now restart the VM before moving onto the following components, when you restart PowerShell, the script should still be available.
2. Highlight the variables and the entirety of Part4 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 4 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the entirety of Part5 no variables are required in the script and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 5 from your copy of the script.
2. Now restart the VM
3. Click on Start > Settings > Update & Security and click check for updates and install any that appear.

Install SQL Server on a Non-Default Instance for Windows 2016 Environment

You now need to copy the remainder of the script into PowerShell in Administrator mode to complete the prerequisites

1. The last prerequisite is to amend the variables
2. Port Number – To an appropriate potr number
3. SQL Server Account – Standard Server name plus \_SS
4. SQL Server Password – must be complicated and a minimum of 20 characters
5. SQL Server Agent Account – Standard Server name plus \_AS
6. SQL Server Agent Password – must be complicated and a minimum of 20 characters
7. Sys Admin (sa) Password – must be complicated and a minimum of 20 characters
8. Instance ID – needs to be the Organisation i.e. BNSSG or Somerset, or a specifically asked for instance name.
9. Page File Initial Size & Page File Maximum Size minimum and maximum based on the size of the P drive (assuming there is one, if not delete these rows in your copied script).

With the Build script that has an Instance there are also some static Variables, these **do not change** so leave as they are.

1. Highlight the variables and the entirety of Part1 in the scripts and either press F8 or click on the run selection icon in PowerShell . If the script runs successfully, delete Part 1 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part2 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 2 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part3 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 3 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Now restart the VM before moving onto the following components, when you restart PowerShell, the script should still be available.
2. Highlight the variables and the entirety of Part4 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 4 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the entirety of Part5 no variables are required in the script and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 5 from your copy of the script.
2. Now restart the VM
3. Click on Start > Settings > Update & Security and click check for updates and install any that appear.

Install SQL Server Analysis Services for Windows 2016 Environment

1. The last prerequisite is to amend the variables
2. SQL Server Analysis Services Account – Standard Server name plus \_Ans
3. SQL Server Analysis Services Password – must be complicated and a minimum of 20 characters
4. Page File Initial Size & Page File Maximum Size minimum and maximum based on the size of the P drive (assuming there is one, if not delete these rows in your copied script).
5. Highlight the variables and the entirety of Part1 in the scripts and either press F8 or click on the run selection icon in PowerShell . If the script runs successfully, delete Part 1 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part2 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 2 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part3 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 3 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part4 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 4 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the entirety of Part5 no variables are required in the script and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 5 from your copy of the script.
2. Now restart the VM
3. Click on Start > Settings > Update & Security and click check for updates and install any that appear.

Install SQL Server Integration Services for Windows 2016 Environment

1. The last prerequisite is to amend the variables
2. SQL Server Integration Services Account – Standard Server name plus \_IS
3. SQL Server Integration Services Password – must be complicated and a minimum of 20 characters
4. Page File Initial Size & Page File Maximum Size minimum and maximum based on the size of the P drive (assuming there is one, if not delete these rows in your copied script).
5. Highlight the variables and the entirety of Part1 in the scripts and either press F8 or click on the run selection icon in PowerShell . If the script runs successfully, delete Part 1 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part2 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 2 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part3 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 3 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part4 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 4 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Now restart the VM
2. Click on Start > Settings > Update & Security and click check for updates and install any that appear.

Prerequisites for Windows 2019 Environment

1. Please take a snapshot of the Virtual Machine prior to starting this process
2. You need to be running PowerShell in Administrator mode
3. Check for any new SQL patches that may need to be added to the script, best place to look is <https://sqlserverbuilds.blogspot.com/>
4. Set up the appropriate Service accounts in the correct active directory with the following setup, the password must be complicated and a minimum of 20 characters
5. SQL Server Service Account <Server Name>\_SS
6. SQL Server Agent Account <Server Name>\_AS
7. Integration Services Account <Server Name>\_IS
8. Analysis Services Account <Server Name>\_ANS
9. Pick the correct script, there will be number of different scripts for the database engine, analysis services and Integration Services, they will be:

**DB Engine (Both Default and Named instance)**

1. SQL Server 2022 Development Edition DB Engine Install - WIN 2019 OS Install.ps1
2. SQL Server 2022 Standard Edition DB Engine Install - WIN 2019 OS Install.ps1
3. SQL Server 2022 Enterprise Edition DB Engine Install - WIN 2019 OS Install.ps1
4. SQL Server 2022 Development Edition DB Engine Install - InstanceEnabled - WIN 2019 OS Install.ps1
5. SQL Server 2022 Standard Edition DB Engine Install - InstanceEnabled - WIN 2019 OS Install.ps1
6. SQL Server 2022 Enterprise Edition DB Engine Install - InstanceEnabled - WIN 2019 OS Install.ps1

**Analysis Services**

1. SQL Server 2022 Development Edition Analysis Services Install - WIN 2019 OS Install.ps1
2. SQL Server 2022 Standard Edition Analysis Services Install - WIN 2019 OS Install.ps1
3. SQL Server 2022 Enterprise Edition Analysis Services Install - WIN 2019 OS Install.ps1

**Integration Services**

1. SQL Server 2022 Development Edition Integration Services Install - WIN 2019 OS Install.ps1
2. SQL Server 2022 Standard Edition Integration Services Install - WIN 2019 OS Install.ps1
3. SQL Server 2022 Enterprise Edition Integration Services Install - WIN 2019 OS Install.ps1
4. Run the following Prerequisites scripts
5. The first prerequisite script lokks for a Temp folder in the C drive and if its not there it wil create oneText

   Description automatically generated
6. This looks for the correct version of .Net framework which is 4.7 or above, If its already at this level the scrip will stop, if its not at the correct level it will create it. If it This can take a while, and you will need to Check the license key box and install button.A picture containing chart

   Description automatically generated
7. Reboot the server when it asks you to.
8. **Do not change** the config file, it is set up ready to use for all cases.

Install SQL Server on a Default Instance for Windows 2019 Environment

You now need to copy the remainder of the script into PowerShell in Administrator mode to complete the prerequisites

1. The last prerequisite is to amend the variables in the script
2. Port Number – To an appropriate port number
3. SQL Server Account – Set up earlier ending in \_SS
4. SQL Server Password – Set up earlier and is complicated and a minimum of 20 characters
5. SQL Server Agent Account – Set up earlier ending in \_AS
6. SQL Server Agent Password – Set up earlier and is complicated and a minimum of 20 characters
7. Sys Admin (sa) Password – must be complicated and a minimum of 20 characters
8. Page File Initial Size & Page File Maximum Size minimum and maximum based on the size of the P drive (assuming there is one, if not delete these rows in your copied script).
9. Highlight the variables and the entirety of Part1 in the scripts and either press F8 or click on the run selection icon in PowerShell . If the script runs successfully, delete Part 1 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part2 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 2 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part3 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 3 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part4 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 4 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the entirety of Part5 no variables are required in the script and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 5 from your copy of the script.
2. Now restart the VM
3. Click on Start > Settings > Update & Security and click check for updates and install any that appear.

Install SQL Server on a Non-Default Instance for Windows 2019 Environment

You now need to copy the remainder of the script into PowerShell in Administrator mode to complete the prerequisites

1. The last prerequisite is to amend the variables
2. Port Number – To an appropriate port number
3. SQL Server Account – Set up earlier ending in \_SS
4. SQL Server Password – Set up earlier and is complicated and a minimum of 20 characters
5. SQL Server Agent Account – Set up earlier ending in \_AS
6. SQL Server Agent Password – Set up earlier and is complicated and a minimum of 20 characters
7. Sys Admin (sa) Password – must be complicated and a minimum of 20 characters
8. Page File Initial Size & Page File Maximum Size minimum and maximum based on the size of the P drive (assuming there is one, if not delete these rows in your copied script).

With the Build script that has an Instance there are also some static Variables, these **do not change** and leave as they are.

1. Highlight the variables and the entirety of Part1 in the scripts and either press F8 or click on the run selection icon in PowerShell . If the script runs successfully, delete Part 1 from your copy of the script.

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**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

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1. Highlight the entirety of Part5 no variables are required in the script and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 5 from your copy of the script.
2. Now restart the VM
3. Click on Start > Settings > Update & Security and click check for updates and install any that appear.

Install SQL Server Analysis Services for Windows 2019 Environment

1. The last prerequisite is to amend the variables
2. SQL Server Analysis Services Account – Set up earlier ending in \_Ans
3. SQL Server Analysis Services Password – Set up earlier and is complicated and a minimum of 20 characters
4. Page File Initial Size & Page File Maximum Size minimum and maximum based on the size of the P drive (assuming there is one, if not delete these rows in your copied script).
5. Highlight the variables and the entirety of Part1 in the scripts and either press F8 or click on the run selection icon in PowerShell . If the script runs successfully, delete Part 1 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part2 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 2 from your copy of the script.

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1. Highlight the variables and the entirety of Part3 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 3 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part4 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 4 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Now restart the VM
2. Click on Start > Settings > Update & Security and click check for updates and install any that appear.

Install SQL Server Integration Services for Windows 2019 Environment

1. The last prerequisite is to amend the variables
2. SQL Server Integration Services Account – Set up earlier ending in \_IS
3. SQL Server Integration Services Password – Set up earlier and is complicated and a minimum of 20 characters
4. Page File Initial Size & Page File Maximum Size minimum and maximum based on the size of the P drive (assuming there is one, if not delete these rows in your copied script).
5. Highlight the variables and the entirety of Part1 in the scripts and either press F8 or click on the run selection icon in PowerShell . If the script runs successfully, delete Part 1 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Highlight the variables and the entirety of Part2 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 2 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

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1. Highlight the variables and the entirety of Part4 in the scripts and either press F8 or click on the run selection icon in PowerShell. If the script runs successfully, delete Part 4 from your copy of the script.

**NOTE:*****If there are any issues fix in the script and then rerun, you may need to revert to the snapshot before rerunning.***

1. Now restart the VM
2. Click on Start > Settings > Update & Security and click check for updates and install any that appear.

Document Status

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Version Control

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| **Version** | **Date** | **Reviewer** | **Comment** |
| 0.1 | 16/02/2023 | Chris Borman | First Draft |
| 0.2 | 15/03/2023 | Chris Borman | Added Windows 2019 script details |
|  |  |  |  |