

Install Configuration Manager Prerequisites

The installation of Microsoft Configuration Manager requires many different roles and components to be installed prior to getting a functional MCM install up and running. Most of these are straight forward but making sure they are all installed is critical in ensuring there are no errors with the Prereq check and avoiding troubleshooting failures. Not all of these are strictly necessary depending on which roles will be used and what workloads are needed. I am an advocate of knowing how to do things manually but

<https://github.com/MSEndpointMgr/ConfigMgrPrerequisitesTool/releases> does look promising to assist in downloading and installing the list. Maybe someday, I'll test it out.

Roles and Features:

- .NET Framework 3.5/4
- Internet Information Services (IIS)
- Remote Differential Compression (RDC)
- Background Intelligent File Transfer Service (BITS)
- Windows Server Update Services (WSUS)

Applications:

- Microsoft SQL Server
- Microsoft SQL Server Management Studio
- SQL Server Reporting Services
- SQL Report Viewer
- Windows Assessment and Deployment Toolkit (ADK)
- ADK Windows PE (Preinstallation Environment) Add-On

Install Roles and Features

As discussed in a previous step the roles and features can be installed with `Install-WindowsFeature` and validated with `Get-WindowsFeature` afterwards. The list needed is: Web-Windows-Auth, Web-ISAPI-Ext, Web-Metabase, Web-WMI, BITS, RDC, NET-Framework-Features, Web-Asp-Net, Web-Asp-Net45, NET-HTTP-Activation, NET-Non-HTTP-Activ.

```
Get-WindowsFeature | Where-Object {$_.InstallState -eq 'Installed'}
```

Display Name	Name	Install State
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[X] File and Storage Services	FileAndStorage-Services	Installed
[X] Storage Services	Storage-Services	Installed
[X] Web Server (IIS)	Web-Server	Installed
[X] Web Server	Web-WebServer	Installed
[X] Common HTTP Features	Web-Common-Http	Installed
[X] Default Document	Web-Default-Doc	Installed
[X] Directory Browsing	Web-Dir-Browsing	Installed
[X] HTTP Errors	Web-Http-Errors	Installed
[X] Static Content	Web-Static-Content	Installed
[X] HTTP Redirection	Web-Http-Redirect	Installed
[X] Health and Diagnostics	Web-Health	Installed
[X] HTTP Logging	Web-Http-Logging	Installed
[X] Logging Tools	Web-Log-Libraries	Installed
[X] Request Monitor	Web-Request-Monitor	Installed
[X] Tracing	Web-Http-Tracing	Installed
[X] Performance	Web-Performance	Installed
[X] Static Content Compression	Web-Stat-Compression	Installed
[X] Security	Web-Security	Installed
[X] Request Filtering	Web-Filtering	Installed
[X] Windows Authentication	Web-Windows-Auth	Installed
[X] Application Development	Web-App-Dev	Installed
[X] .NET Extensibility 3.5	Web-Net-Ext	Installed
[X] .NET Extensibility 4.8	Web-Net-Ext45	Installed
[X] ASP.NET 3.5	Web-Asp-Net	Installed
[X] ASP.NET 4.8	Web-Asp-Net45	Installed
[X] ISAPI Extensions	Web-ISAPI-Ext	Installed
[X] ISAPI Filters	Web-ISAPI-Filter	Installed
[X] Management Tools	Web-Mgmt-Tools	Installed
[X] IIS Management Console	Web-Mgmt-Console	Installed
[X] IIS 6 Management Compatibility	Web-Mgmt-Compat	Installed
[X] IIS 6 Metabase Compatibility	Web-Metabase	Installed
[X] IIS 6 WMI Compatibility	Web-WMI	Installed
[X] .NET Framework 3.5 Features	NET-Framework-Features	Installed
[X] .NET Framework 3.5 (includes .NET 2.0 and 3.0)	NET-Framework-Core	Installed
[X] HTTP Activation	NET-HTTP-Activation	Installed
[X] Non-HTTP Activation	NET-Non-HTTP-Activ	Installed
[X] .NET Framework 4.8 Features	NET-Framework-45-Fea...	Installed
[X] .NET Framework 4.8	NET-Framework-45-Core	Installed

[X] ASP.NET 4.8	NET-Framework-45-ASPNET	Installed
[X] WCF Services	NET-WCF-Services45	Installed
[X] TCP Port Sharing	NET-WCF-TCP-PortShar...	Installed
[X] Azure Arc Setup	AzureArcSetup	Installed
[X] Background Intelligent Transfer Service (BITS)	BITS	Installed
[X] IIS Server Extension	BITS-IIS-Ext	Installed
[X] Microsoft Defender Antivirus	Windows-Defender	Installed
[X] Remote Differential Compression	RDC	Installed
[X] Remote Server Administration Tools	RSAT	Installed
[X] Feature Administration Tools	RSAT-Feature-Tools	Installed
[X] BITS Server Extensions Tools	RSAT-Bits-Server	Installed
[X] System Data Archiver	System-DataArchiver	Installed
[X] Windows PowerShell	PowerShellRoot	Installed
[X] Windows PowerShell 5.1	PowerShell	Installed
[X] Windows PowerShell 2.0 Engine	PowerShell-V2	Installed
[X] Windows Process Activation Service	WAS	Installed
[X] Process Model	WAS-Process-Model	Installed
[X] .NET Environment 3.5	WAS-NET-Environment	Installed
[X] Configuration APIs	WAS-Config-APIs	Installed
[X] WoW64 Support	WoW64-Support	Installed
[X] XPS Viewer	XPS-Viewer	Installed

Set Firewall Rules

Install ADK and PE Add-On

1. Download the latest version of the ADK and ADK WinPE setup from Microsoft. These are updated with major Windows updates so change often.
2. Run adksetup.exe and select Install the Windows Assessment and Deployment Kit to this computer. If running on multiple systems, it may be worthwhile to download to a centralized location to save some time.
3. Determine if you want to allow Microsoft to collect data.
4. Click Next and accept the license.
5. Select which features should be installed. At a minimum select Deployment Tools, Windows Preinstallation Environment, and the User State Migration Toolkit (USMT).
6. Run adkwinpesetup.exe and keep all defaults. If you didn't allow the ADK to collect data, this should persist for the PE Add-ons.

Install SQL Components

Make sure to log into the server as a domain account with administrator. Using the local administrator makes permissions later very fun.

SQL Server 2019

1. Download and launch SQL Server 2019 Evaluation Edition.
2. Pick Custom for installation type.
3. Provide a path to download the installation media. and click Install. This will download about 1.5 GB so will take a moment.
4. Once completed, the SQL Server Installation Center will launch. Click Installation on the left menu
5. Select 'New SQL Server stand-alone installation or add features to an existing installation'.
6. I use the Evaluation copy of SQL Server. If this were a licensed version, the product key could be entered. Click Next
7. Accept the license terms and click Next.
8. It is recommended to allow checking for updates during the installation.
9. There is a brief check for Install Rules that help identify potential issues. Windows Firewall will warn if it's on. Make sure the necessary rules are in place and click Next.
10. On the Feature Selection screen, select the following and press Next.
 - Database Engine Services
 - SQL Serve Replicaion
 - Full-Text and Semantic Extractions for Search
 - Data Quality Services
 - Client Tools Connectivity
 - Client Tools Backwards Compatibility
 - Client Tools SDK
 - SQL Client Connectivity SDK
 - Master Data Services
11. Leave the default instance (MSSQLSERVER) and click Next.
12. On Server Configuration specify an account name and password to run SQL Server Agent and SQL Server Database Engine. I generally confirm the default Collation is still SQL_Latin1_General_CP1_CI_AS. Click Next which will validate credentials.
13. On the Database Engine Configuration Page there are several settings than can be configured.
 - Select Windows Authentication Mode and add the SCCMAdmins group to SQL Server Administrators.
 - If this were a production environment, or multiple drives were in use, the Data Directories tab allows you to specify location for the databases, logs, and backup directories.
 - TempDB allows you to specify where the TempDB resides and autogrowth settings. The Autogrowth (MB) should be set to 512 MB. The initial size for should also be increased to reserve space and speed up installation.
 - The MaxDOP tab allows you to specify the maximum degree of parallelism or how SQL deals with multi-core CPUs.

- SQL Memory settings can be configured to use unlimited or set the Recommended value (max 75% of installed RAM).

14. Finish clicking Next and Install to complete the Installation.

SQL Server Management Studio (SSMS)

1. From the SQL Server Installation Server, clicking Install SQL Server Management Tools, will take you to a download page for SQL Server Management Studio (SSMS). Download and launch the setup. There are no options that need to be changed unless you are installing to a non-default drive/folder.

SQL Server Reporting Services (SSRS)

1. This is another where you can easily find the download link from the SQL Server Installation Center. Download and launch the setup.
2. Select Install Reporting Services.
3. I select the Evaluation version as I rebuild often. Like the full SQL Server installation you can also specify Developer/Express or provide the SQL key to license if called for.
4. Accept the license and click Next.
5. Select Install Reporting Services only and click Next.
6. Change the installation path if desired and click Install.
7. When complete, close the installation as it will be configured later.

If not done so already, now would be a great time to check for updates and reboot servers.

Revision #4

Created 30 December 2023 16:20:12 by Matthew B.

Updated 1 January 2024 04:58:19 by Matthew B.