Microsoft System Center Configuration Manager 2012 R2 Preview Installation

Shahab Al Yamin Chawdhury (Shuvro) 11/17/13 SCCM 2012 R2

Contents

1. System Requirements....4
1.1 Software Pre-Requisites....4
1.1.1 Windows Assessment and Deployment Kit (Windows ADK) for Windows 8.1: http://www.microsoft.com/en-us/download/details.aspx?id=39982....4
1.1.2 Next we want to extend the Active Directory Schema for SCCM. It's not mandatory, and you don't need to do this as I have it working without this, however it does help clients discover the SCCM server and it's sites. On the SCCM installation media run the following on a domain controller as a Domain Admin with Schema Admin Privileges. 5
1.1.3 Microsoft System Center 2012 R2 Configuration Manager - Clients for Additional Operating Systems: http://www.microsoft.com/en-us/download/details.aspx?id=39360 5
1.1.4 Prerequisites Download: Approximately 352 MB of it bearing 370,106,368 bytes without the ADK. 6
1.1.5 USMT: Supported Operating Systems....7
2 Some Errors to Watch Out For (Real Errors from Failed Installation) 8
2.1 Schema Extensions (Warning):....8
2.2 Firewall exceptions for SQL Server (Warning): 8
2.3 SQL Server service running account (Failed):....8
2.4 Verify site server permissions to publish to Active Directory (Warning): 8
2.5 SQL Server Version (Failed):....8
2.6 SQL Server Edition (Failed):....8
2.7 SQL Server TCP Port (Failed): 8
2.8 Configuration for SQL Server memory usage (Warning):....8
2.9 SQL Server Process Memory Allocation (Warning):....9
2.10 BITS Installed/Enabled (Warning):....9
3 SQL Server 2012 Installation....10
3.1 Server OS Supported by SCCM 2012 R2 10
3.2 SQL Server Component Requirements: http://technet.microsoft.com/en-us/library/gg682077.aspx#BKMK_SupConfigSQLSrvReq 10
3.3 SQL Server Port Configurations 10
3.4 Service Accounts Requirements....11
3.5 Deployment....11
Installation of Microsoft SQL Server 2012 Step by Step 12
4 System Center Configuration Manager 2012 R2 Preview Installation....22
4.1 SCCM Supported Configurations 22
4.2 Supported Base Operating System Editions....22

4.3 Supported SQL Server Editions 22
4.4 Hardware Considerations for the SCCM 2012 R2.....22
4.5 Pre-Requisite Component Check 22
4.6 Deployment.....23

Table of Figures

Figure : Windows ADK 4
Figure : Schema Update with Extadsch.exe 5
Figure : SCCM Additional Clients 6
Figure : SCCM 2012 R2 Pre-Requisites, Downloaded 6
Figure : SQL Server Components 10
Figure : Installation Steps 11
Figure : SQL Server 2008 SP1 Installation 11
Figure : Installation Screen 13
Figure : Stand-Alone Installation 14
Figure : Setup Support Rules 14
Figure : Latest Product Updates 15
Figure : Setup Support Rules, Others 15
Figure : SQL Server Feature Installation 16
Figure : Feature Selection Screen 16
Figure : Installation Rules Verification 17
Figure : Instance Configuration 17
Figure : Required Service Accounts 18
Figure : DB Engine Configuration 19
Figure : SSAS Configuration 19
Figure : SSRS Configuration 20
Figure : Installation Summary 20
Figure : Installation Screen 23
Figure : Things to Consider 24
Figure : Getting Started 24
Figure : Insert Product Key 25
Figure : Accept Licensing Terms 25
Figure : Prerequisite Licenses 26
Figure : Download Prerequisites 26
Figure : Server Language Selection 27
Figure : Client Language Selection 27
Figure : Site Settings 28
Figure : Primary Site FQDN 28
Figure : Server Hierarchy 29
Figure : DB Information 29
Figure : DB path 30
Figure : Client Communications 30
Figure : Site System Roles 31
Figure : CEIP Acceptance 31
Figure : Setting Summary prior deployment 32
Figure : Prerequisite Check 32
Figure : ADK Installation 33
Figure : Prerequisite Re-Check 33
Figure : Actual Installation Taking Place 34
Figure : SCCM 2012 R2 Installation Completes 34
Figure : SCCM Management Console 35

System Center Configuration Manager 2012 R2 Installation

1. System Requirements

- Fundamentals of Configuration Manager: http://technet.microsoft.com/en-us/library/gg682106.aspx
- What's New in System Center 2012 R2 Configuration Manager: http://technet.microsoft.com/en-us/library/dn236351.aspx
- System Requirements for System Center 2012 R2: http://technet.microsoft.com/en-us/library/dn281925.aspx
- Documentation Library for System Center 2012 Configuration Manager: http://technet.microsoft.com/en-us/library/gg682041.aspx
- The System Center Team Blog: http://blogs.technet.com/b/systemcenter/
- Getting Started: http://technet.microsoft.com/en-us/library/dn235548.aspx
- Evaluate System Center 2012 R2: http://www.microsoft.com/en-us/server-cloud/products/system-center-2012-r2/default.aspx#fbid=bR7QKv7dAQi
- Release Notes: http://technet.microsoft.com/library/dn236347.aspx
- System Center 2012 R2 Jump Start Training: http://www.microsoftvirtualacademy.com/training-courses/what-s-new-in-system-center-2012-r2-jump-start#?fbid=JLrIB5jVU6s
- Microsoft System Center 2012 R2 Configuration Manager and Endpoint Protection Evaluation Resources: http://technet.microsoft.com/en-us/evalcenter/dn205298.aspx?wt.mc_id=TEC_151_1_27

1.1 Software Pre-Requisites

1.1.1 Windows Assessment and Deployment Kit (Windows ADK) for Windows 8.1: http://www.microsoft.com/en-us/download/details.aspx?id=39982

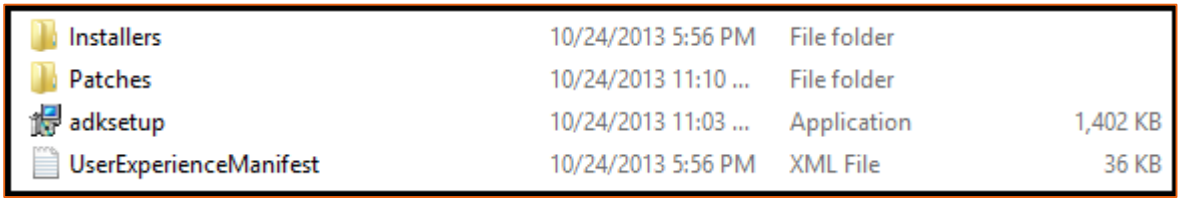

FIGURE 1: WINDOWS ADK

Supported Operating System: Windows 8.1

To install the Windows ADK, your computer must be running one of the following operating systems:

- Windows 8.1
- Windows 8
- Windows 7
- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2008 R2
- Windows Vista
- Windows Server 2008

Only the following components of the ADK is required:

- Deployment Tools
- Windows Preinstallation Environment (Windows PE)
- User State Migration Tool (USMT)

1.1.2 Next we want to extend the Active Directory Schema for SCCM. It's not mandatory, and you don't need to do this as I have it working without this, however it does help clients discover the SCCM server and it's sites. On the SCCM installation media run the following on a domain controller as a Domain Admin with Schema Admin Privileges.

- More info regarding Extending Schema: http://technet.microsoft.com/en-us/library/gg712272.aspx

<path to install media>\SMSSETUP\BIN\X64\extadsch.exe

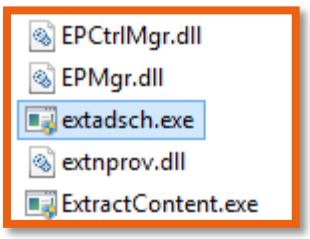

FIGURE 2: SCHEMA UPDATE WITH EXTADSCH.EXE

1.1.3 Microsoft System Center 2012 R2 Configuration Manager - Clients for Additional Operating Systems: http://www.microsoft.com/en-us/download/details.aspx?id=39360

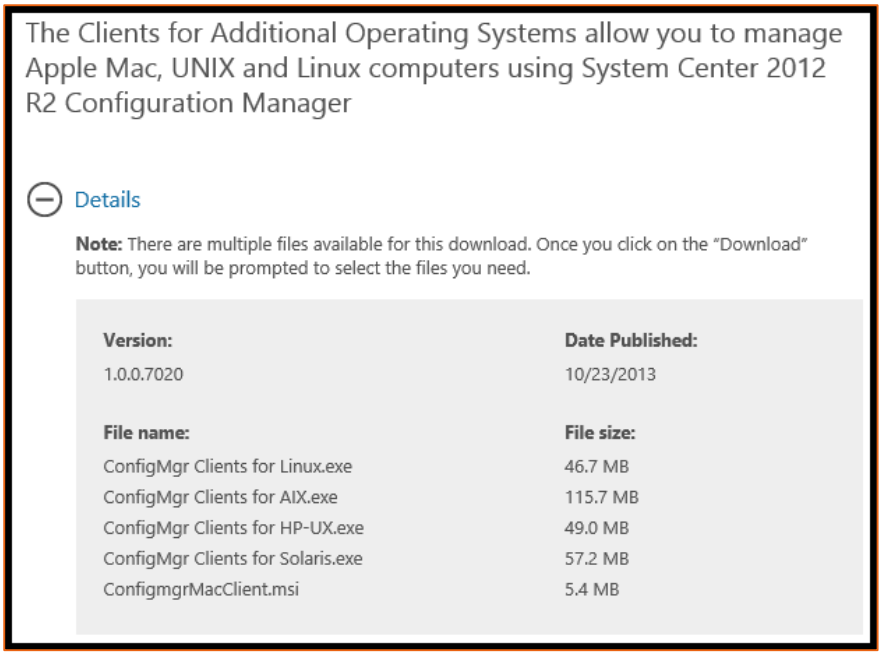

FIGURE 3: SCCM ADDITIONAL CLIENTS

1.1.4 Prerequisites Download: Approximately 352 MB of it bearing 370,106,368 bytes without the ADK.

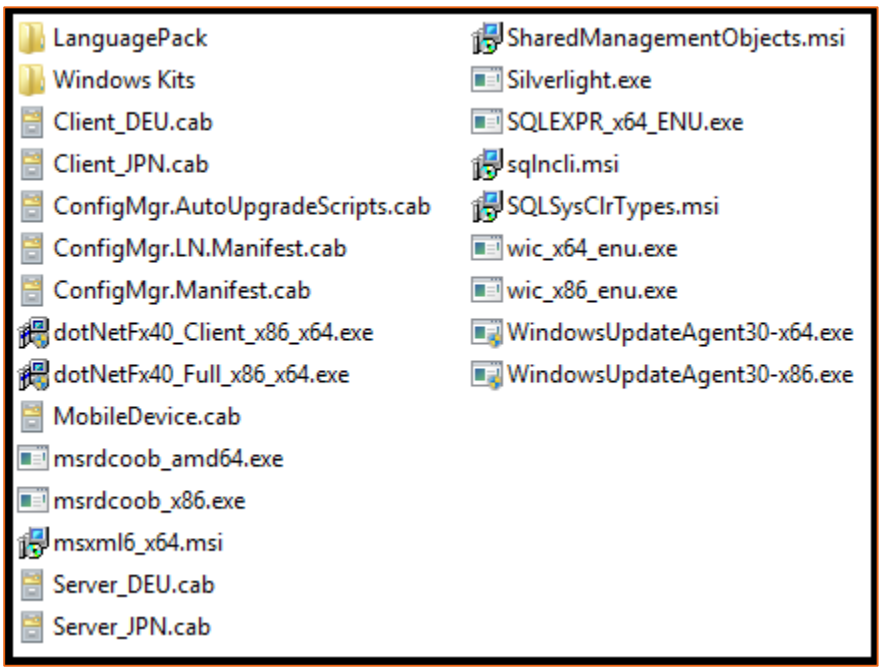

FIGURE 4: SCCM 2012 R2 PRE-REQUISITES, DOWNLOADED

1.1.5 USMT: Supported Operating Systems

The User State Migration Tool (USMT) 5.0 does not have any explicit RAM or CPU speed requirements for either the source or destination computers. If your computer complies with the system requirements of the operating system, it also complies with the requirements for USMT. You need an intermediate store location large enough to hold all of the migrated data and settings, and the same amount of hard disk space on the destination computer for the migrated files and settings.

The following table lists the operating systems supported in USMT.

Operating Systems	ScanState (source computer)	LoadState (destination computer)
Windows® XP Professional	X	
Windows XP Professional x64 Edition	X	
32-bit versions of Windows Vista®	X	X
64-bit versions of Windows Vista	X	X
32-bit versions of Windows® 7	X	X
64-bit versions of Windows 7	X	X
32-bit versions of Windows® 8	X	X
64-bit versions of Windows 8	X	X

Note:

You can migrate a 32-bit operating system to a 64-bit operating system. However, you cannot migrate a 64-bit operating system to a 32-bit operating system.

USMT does not support any of the Windows Server® operating systems, Windows 2000, or any of the starter editions for Windows XP, Windows Vista, or Windows 7. In addition, USMT only supports migration from Windows XP with Service Pack 3.

Windows® RT is not supported for USMT. For more information about how to migrate content to and from Windows RT, see Windows Easy Transfer.

2 Some Errors to Watch Out For (Real Errors from Failed Installation)

2.1 Schema Extensions (Warning):

Configuration Manager Active Directory schema extensions are not required for site server installation, but are recommended to fully support the use of all Configuration Manager Features. For more information about the advantages of extending the schema extensions, see the Configuration Manager Product documentation. More info http://technet.microsoft.com/en-us/library/gg712272.aspx

2.2 Firewall exceptions for SQL Server (Warning):

The Windows Firewall is enabled and does not have exceptions configured for SQL Server or the TCP ports that are required for inter-site data replication. To resolve this issue, allow sqlservr.exe or the required TCP ports to be accessed remotely. By default, SQL Server listens on TCP port 1433 and the SQL Broker Service uses TCP port 4022, but custom ports might be configured. See **ConfigMgrPrereq.log** for port details.

2.3 SQL Server service running account (Failed):

The logon account for the SQL Server service cannot be a local user account, NT SERVICE\<sql service name> or LOCAL SERVICE. You must configure the SQL Server service to use a valid domain account, NETWORK SERVICE, or LOCAL SYSTEM.

2.4 Verify site server permissions to publish to Active Directory (Warning):

The site server might be unable to publish to Active Directory. The computer account for the site server must have Full Control permissions to the System Management container in its Active Directory domain. You can ignore this warning if you have manually verified these permissions. For more information about your options to configure required permissions, see http://go.microsoft.com/fwlink/p/?LinkId=233190.

2.5 SQL Server Version (Failed):

Configuration Manager Sites require a supported SQL Server version with required hotfixes for site database operations to succeed. Before Setup can continue, you must install a supported version of SQL Server on the specified site database server. For more information, see http://go.microsoft.com/fwlink/p/?LinkID=232936.

2.6 SQL Server Edition (Failed):

Configuration Manager primary site and central administration site don't support SQL Server Express Edition.

2.7 SQL Server TCP Port (Failed):

Configuration Manager primary site and central administration site require SQL Server Tcp is enabled and set to Static port.

2.8 Configuration for SQL Server memory usage (Warning):

SQL Server is configured for unlimited memory usage. You should configure SQL Server memory to have a maximum limit.

2.9 SQL Server Process Memory Allocation (Warning):

Configuration Manager requires SQL Server to reserve a minimum of 8 gigabytes (GB) of memory for the central administration site and primary site and a minimum of 4 gigabytes (GB) for the secondary site. This memory is reserved by using the Minimum server memory setting under Server Memory Options and is configured by using SQL Server Management Studio. For more information about how to set a fixed amount of memory, see http://go.microsoft.com/fwlink/p/?LinkId=233759

2.10 BITS Installed/Enabled (Warning):

Background Intelligent Transfer Service (BITS) is required for the management point and distribution point site system roles. BITS is not installed, IIS 6 WMI compatibility component for IIS7 is not installed on this computer or the remote IIS host, or Setup was unable to verify remote IIS settings because IIS common components were not installed on the site server computer. Also, check if IIS/BITS services are running properly. Setup cannot continue until BITS is installed and enabled in the IIS settings.

Some Useful Links

- Prerequisite Checker: http://technet.microsoft.com/library/gg712320.aspx#BKMK_PrerequisiteChecker
- How to: Set a Fixed Amount of Memory (SQL Server Management Studio): http://technet.microsoft.com/library/ms191144(SQL.105).aspx
- Technical Reference for the Prerequisite Checker in Configuration Manager: http://technet.microsoft.com/en-us/library/hh368980.aspx
- Technet Forums: http://social.technet.microsoft.com/Forums/en-us/home?forum=configmanagerdeployment
- System Center Updates Publisher 2011: http://www.microsoft.com/en-us/download/details.aspx?id=11940

3 SQL Server 2012 Installation

3.1 Server OS Supported by SCCM 2012 R2

Site systems are not supported on Server Core installations for the following operating systems:

- Windows Server 2008 or Windows Server 2008 R2.
- Windows Server 2008 Foundation or Windows Server 2008 R2 Foundation.
- Windows Server 2012 or Windows Server 2012 R2. An exception to this is that beginning with System Center 2012 R2 Configuration Manager; these operating systems support the distribution point site system role, without PXE or multicast support.
- Windows Server 2012 Foundation or Windows Server 2012 R2 Foundation.

It is not supported to change the domain membership or computer name of a Configuration Manager site system after it is installed.

Site system roles are not supported on an instance of a Windows Server cluster. The only exception to this is the site database server.

3.2 SQL Server Component Requirements: http://technet.microsoft.com/en-us/library/gg682077.aspx#BKMK_SupConfigSQLSrvReq

FIGURE 5: SQL SERVER COMPONENTS

How to: Set a Fixed Amount of Memory (SQL Server Management Studio):
http://technet.microsoft.com/library/ms191144%28SQL.105%29.aspx

Change the Service Startup Account for SQL Server (SQL Server Configuration Manager):
http://technet.microsoft.com/en-us/library/ms345578.aspx

3.3 SQL Server Port Configurations

Configure a Server to Listen on a Specific TCP Port (SQL Server Configuration Manager):
http://technet.microsoft.com/library/ms177440.aspx

- Intersite communications use the SQL Server Service Broker, which by default uses port TCP 4022.

- Intra-site communication between the SQL Server database engine and various Configuration Manager Site System Roles by default use port TCP 1433. The following site system roles communicate directly with the SQL Server database:
  - Management point
  - SMS Provider computer
  - Reporting Services point
  - Site server

3.4 Service Accounts Requirements

Configure Windows Service Accounts and Permissions: http://technet.microsoft.com/en-us/library/ms143504.aspx

3.5 Deployment

FIGURE 6: INSTALLATION STEPS

Please refer to the installation video @ my YouTube Channel: http://www.youtube.com/watch?v=4DTyocDpyMU

FIGURE 7: SQL SERVER 2008 SP1 INSTALLATION

If you want to install SQL Server 2012 Enterprise or BI or Standard Edition, please refer to this guideline (Install SQL Server 2012 from the Installation Wizard (Setup)): http://msdn.microsoft.com/en-us/library/ms143219.aspx

But again the step by step guidance follows:

Installation of Microsoft SQL Server 2012 Step by Step

We need to install .net framework 3.5 features before proceeding further (follow this blog post to enable this feature on your windows server 2012)

- Download : Microsoft SQL Server 2012Create a user in Active directory and name it svcSQL. (Add User to Active Directory Blog post).
- Add user SPAdmin to local administrator group which was created in last blog post.
- To Add user to Administrators group: Go to : **Server Manager >> Tools >> Active Directory Users and Computers,** then Click on built-in OU and look for **Administrators** group, double click on that and jump on **Members** tab and Add SPAdmin user to it's members, that's it.

Insert SQL Server 2012 media and start installation. Please be mindful that this version of SQL Server Installation can also be used for SharePoint Server 2013 Installation, and also has the right Service Accounts that's created along the way.

Click on Installation link.

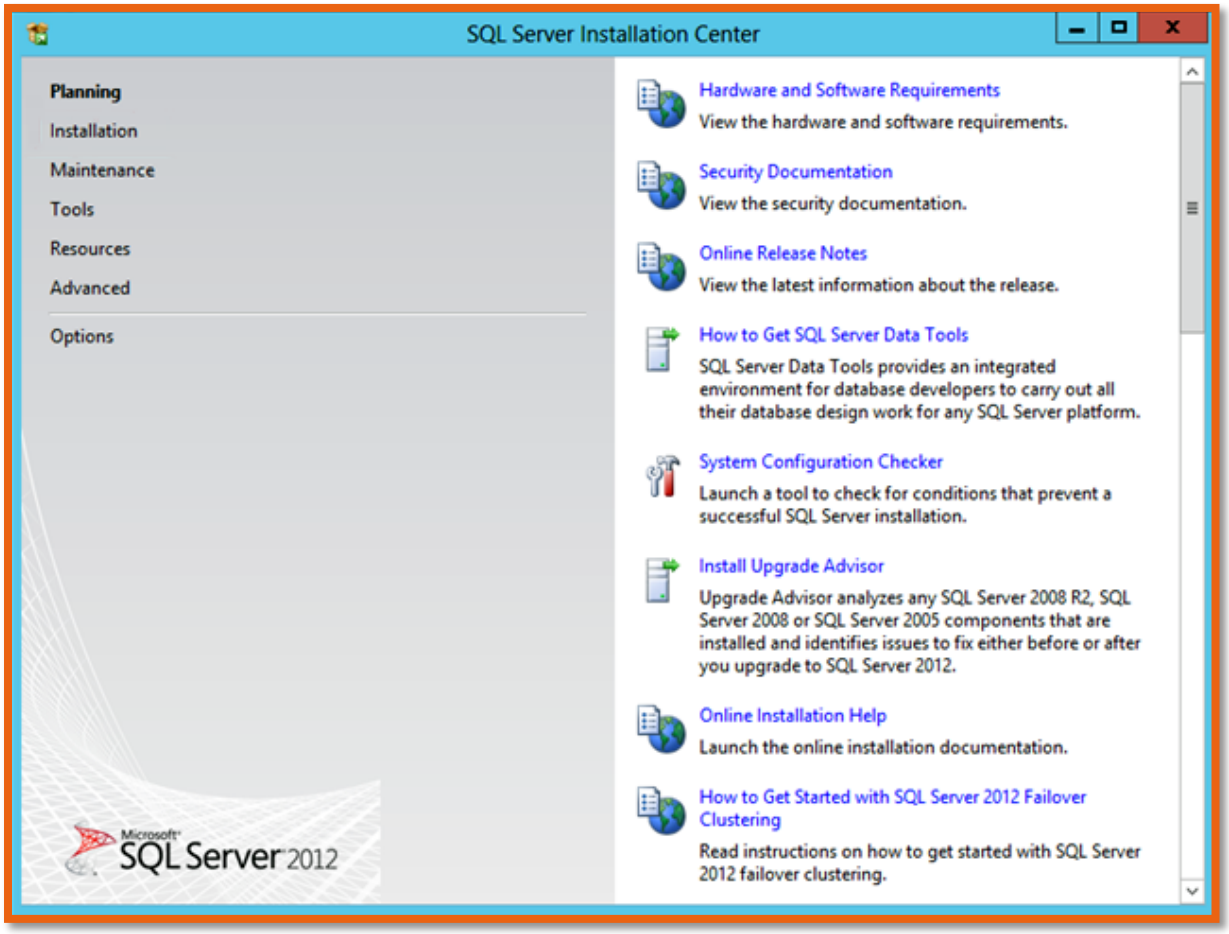

FIGURE 8: INSTALLATION SCREEN

Click on New SQL Server stand-alone installation to start the initial configuration.

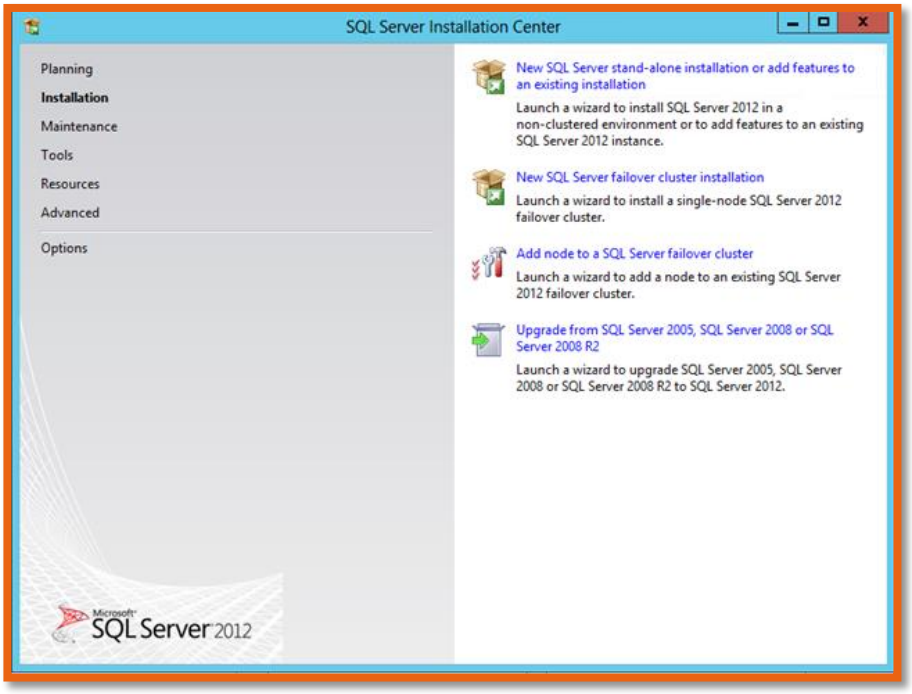

FIGURE 9: STAND-ALONE INSTALLATION

Click **Ok.**

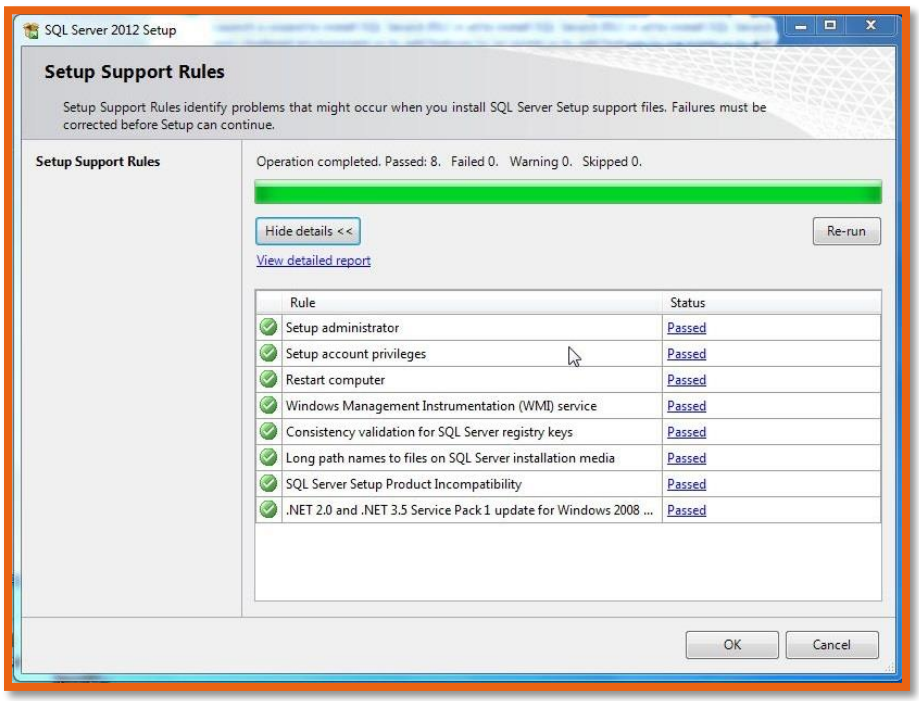

FIGURE 10: SETUP SUPPORT RULES

Enter product key or select trial edition and click Next. Accept the License terms. If you want to you can install updates or skip by uncheck select box and click Next.

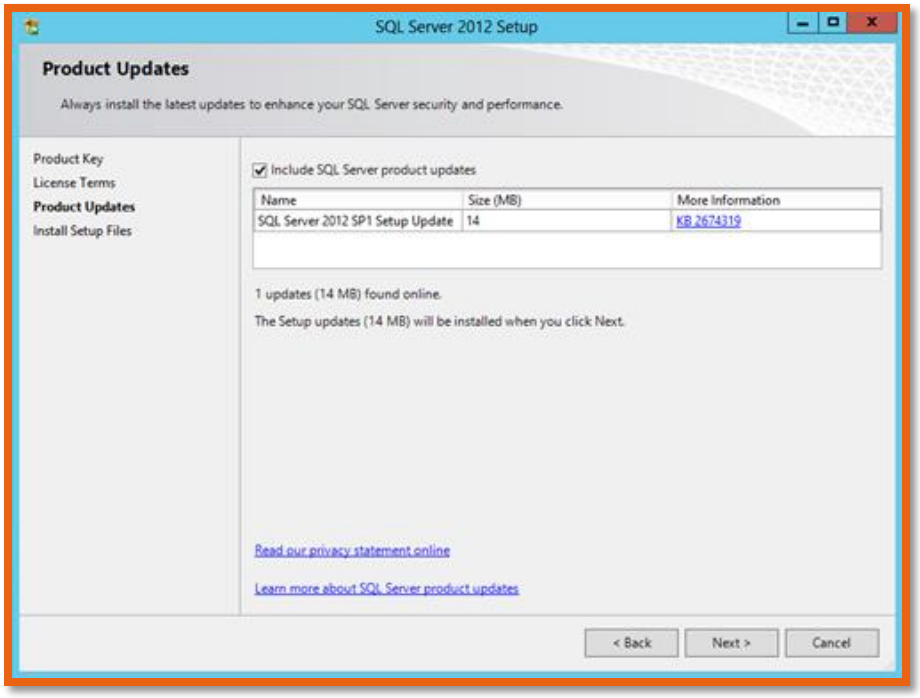

FIGURE 11: LATEST PRODUCT UPDATES

Again click Next to move to support rules.

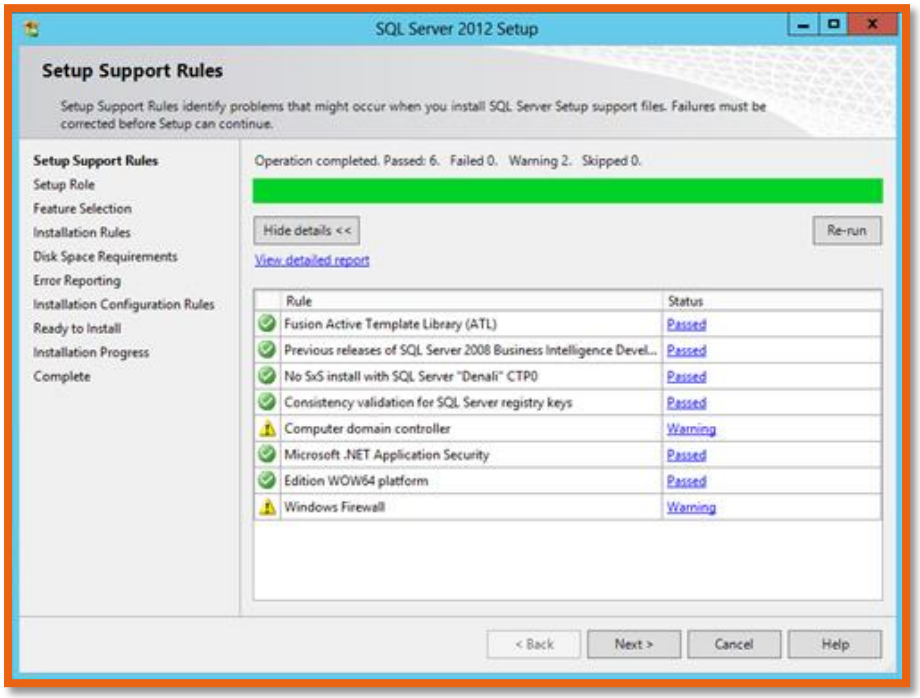

FIGURE 12: SETUP SUPPORT RULES, OTHERS

Since we got zero errors click next to select SQL Server Feature Installation and click Next.

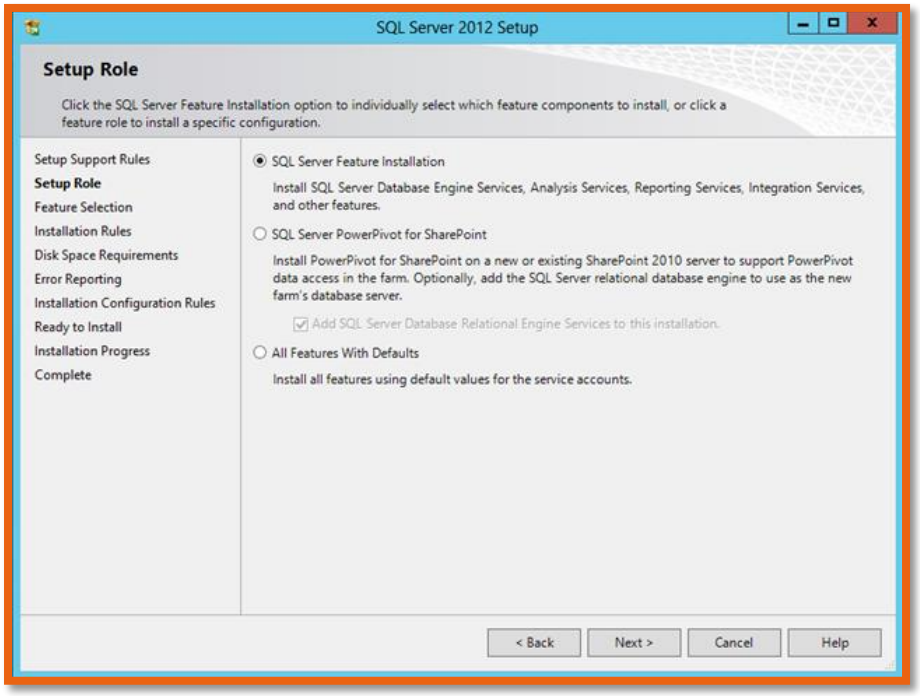

FIGURE 13: SQL SERVER FEATURE INSTALLATION

Select Database engine, SQL Server Replication, Full -Text and Semantic Extractions for Search, Data Quality Service, Analysis Services, Reporting Services – Native, Reporting Services – SharePoint, Management Tools – Basic and Complete both. and click Next.

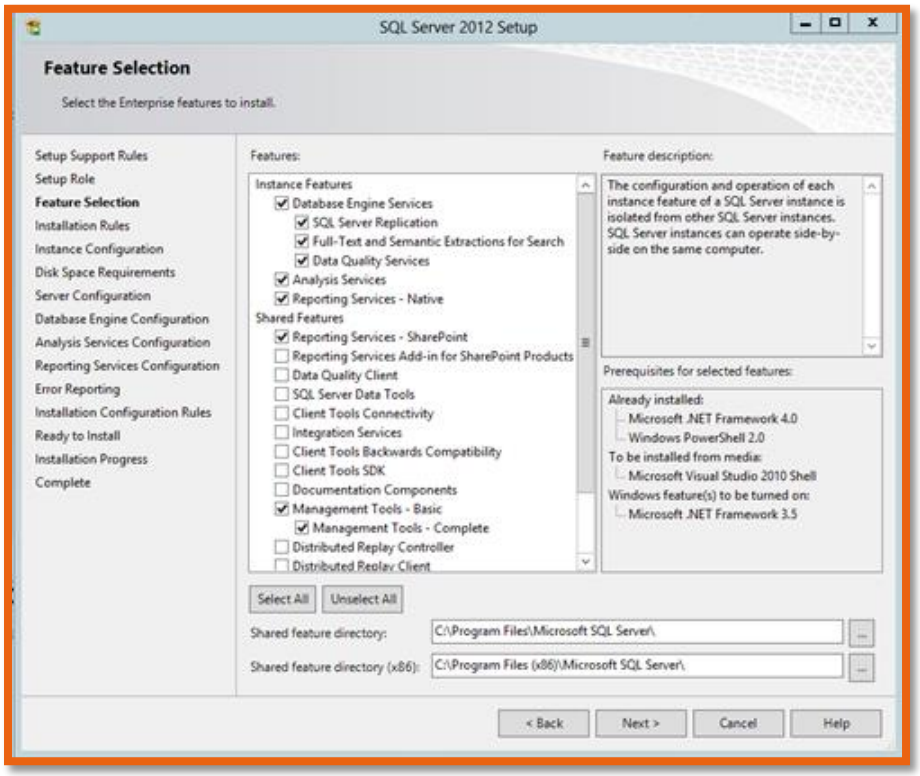

FIGURE 14: FEATURE SELECTION SCREEN

If it produces zero warnings, Click Next.

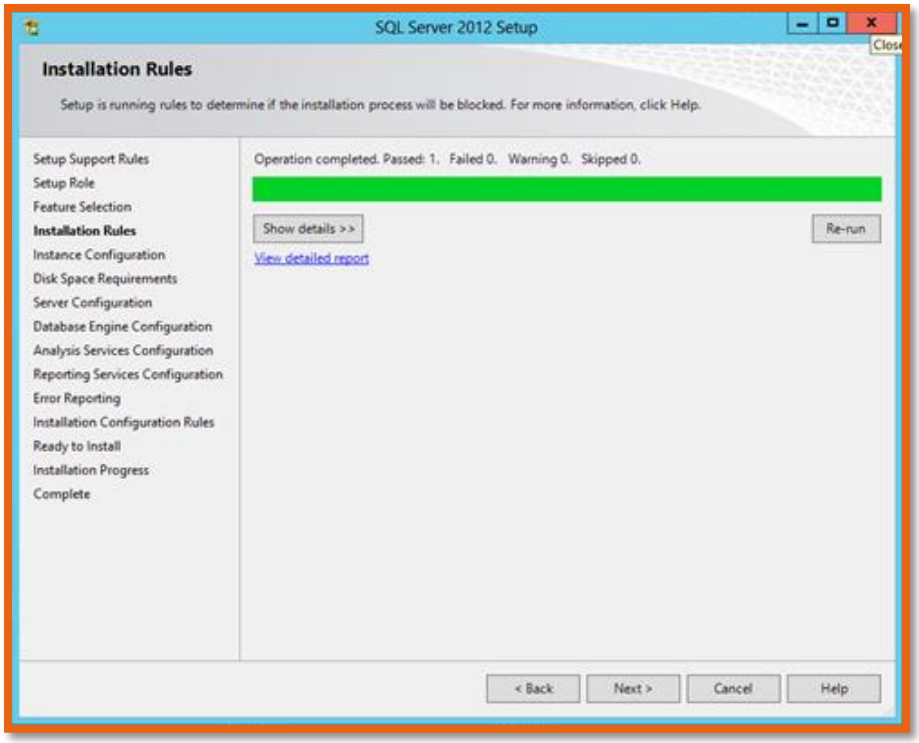

FIGURE 15: INSTALLATION RULES VERIFICATION

Keep default instance and click Next.

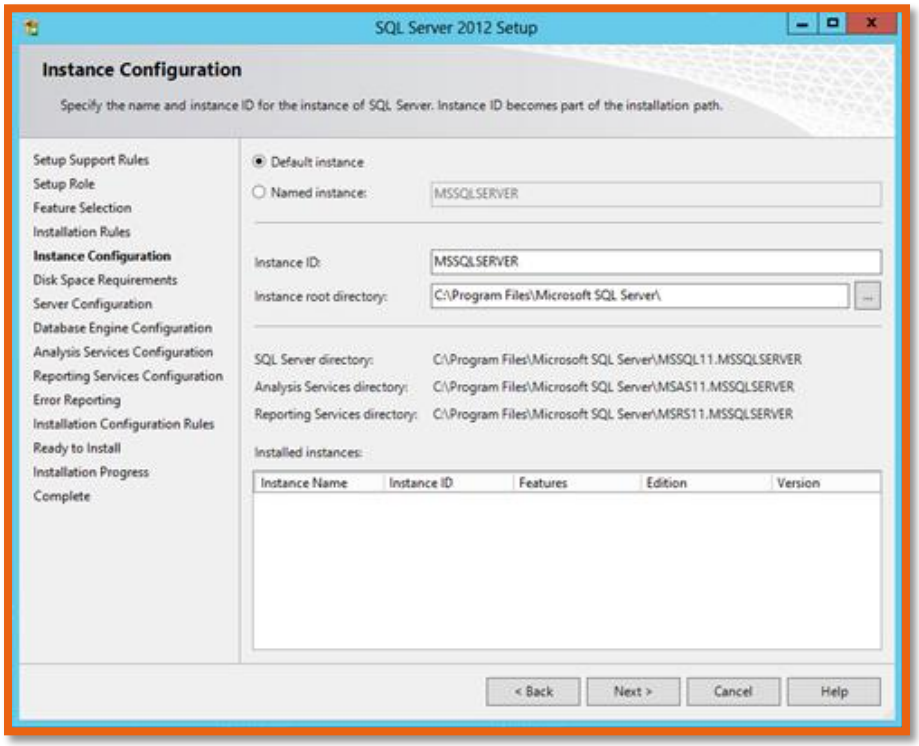

FIGURE 16: INSTANCE CONFIGURATION

Again click Next.

Now I've created three Service Accounts in Active directory named

- SQL Server Database Engine : svcSQL
- SQL Server Agent : svcSQLAgent
- SQL Server Analysis Service : svcSQLAnalysis

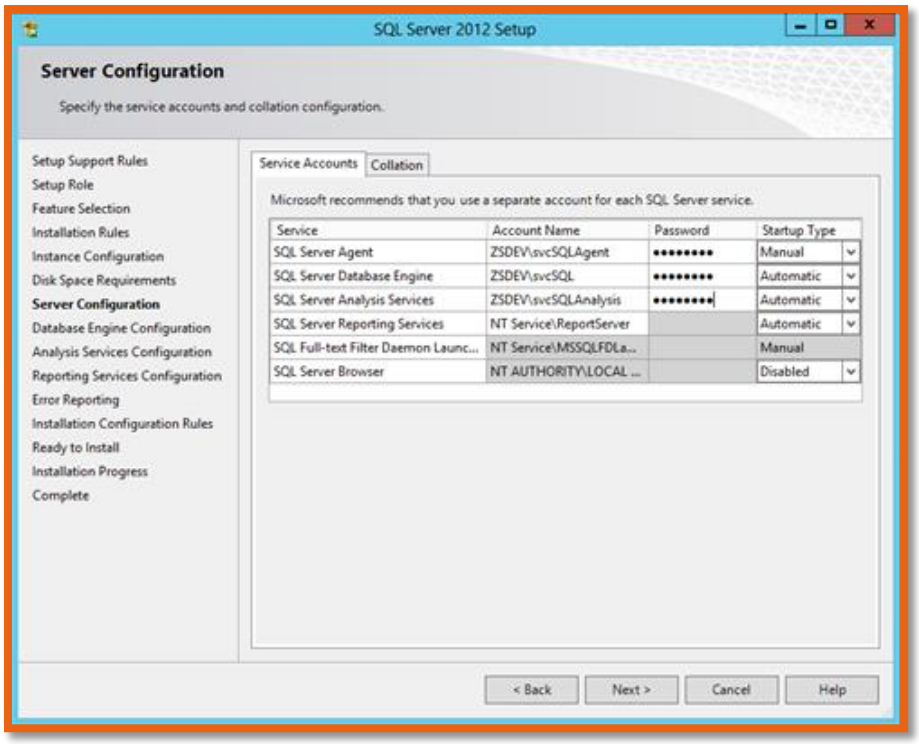

FIGURE 17: REQUIRED SERVICE ACCOUNTS

Click Next. Select Mixed Mode SQL Server authentication and put password for "**sa**" account. Click Add Current User button to add current user as SQL Server admin.

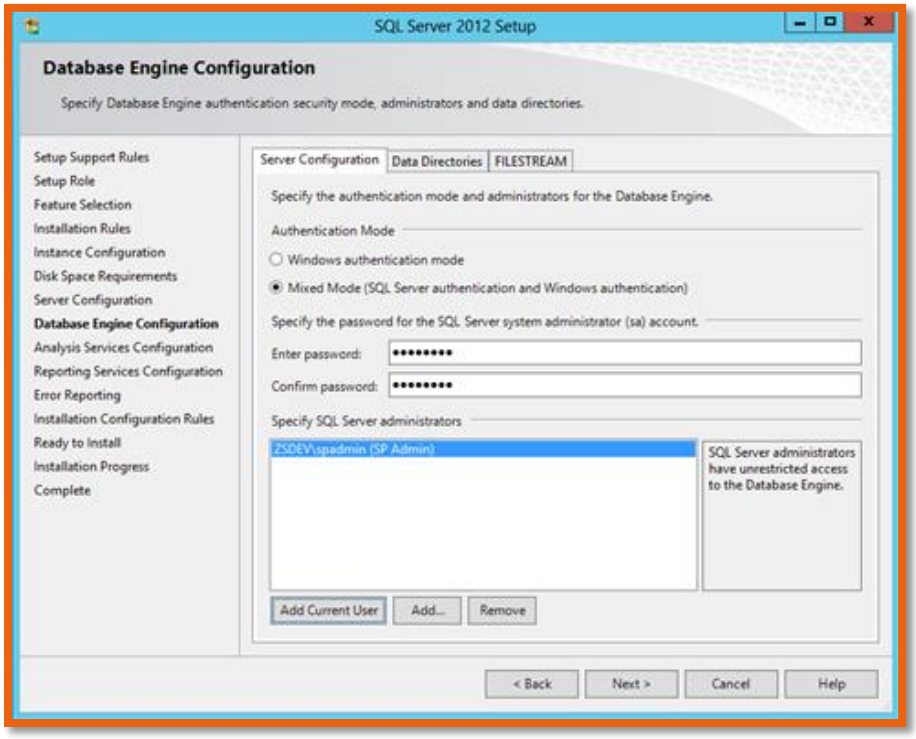

FIGURE 18: DB ENGINE CONFIGURATION

Click Next. Enter svcSQLAnalysis service account as admin for Analysis service access. and go Next.

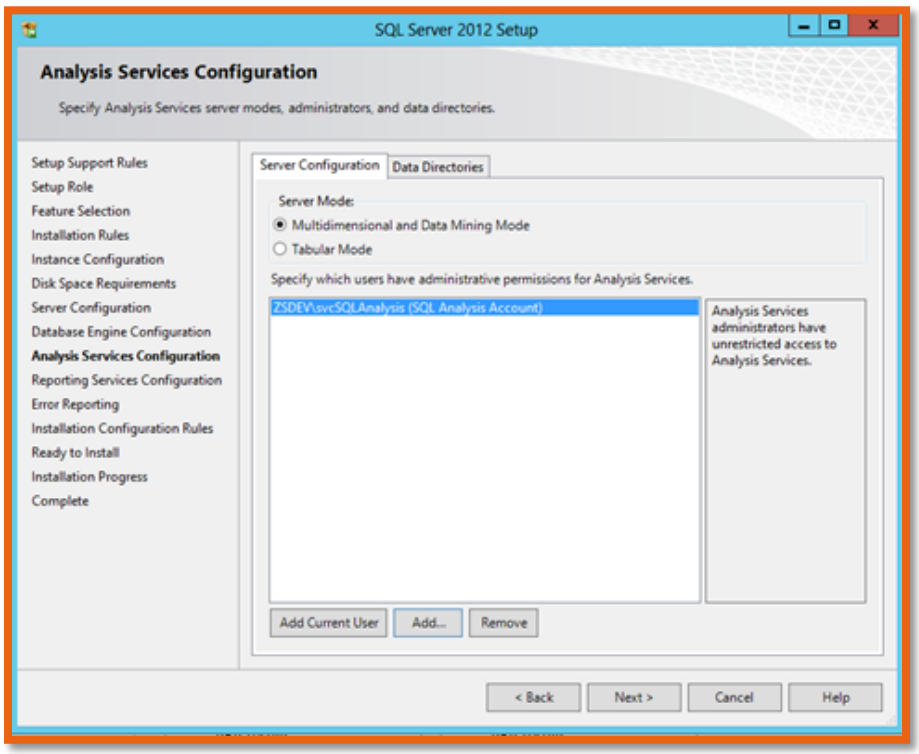

FIGURE 19: SSAS CONFIGURATION

Select Install Only option for Reporting service and go Next.

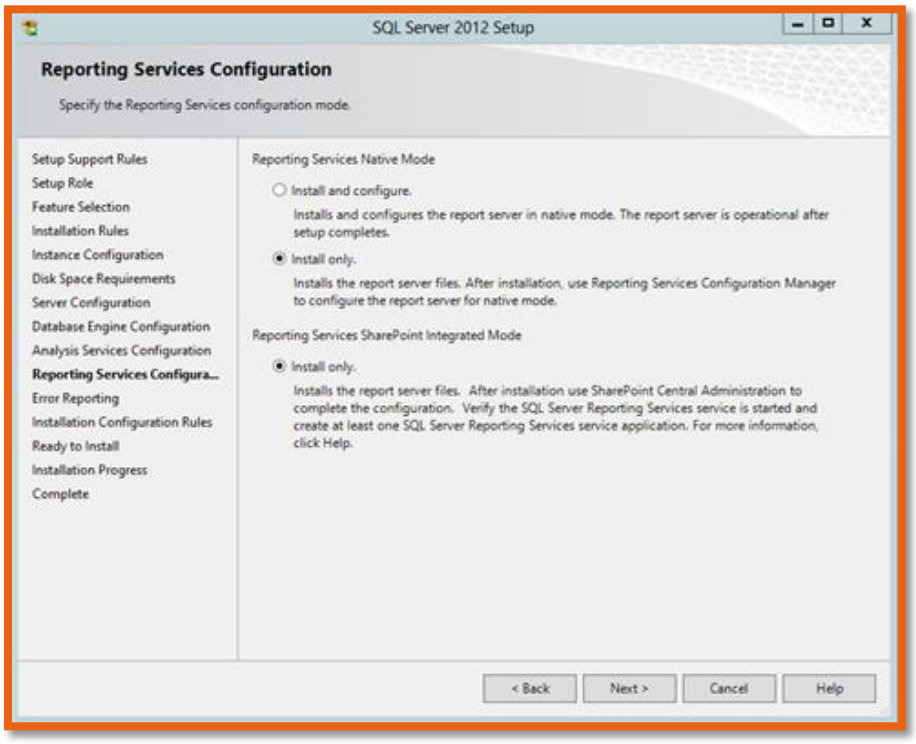

FIGURE 20: SSRS CONFIGURATION

Go Next. Click install button to start the actual installation. And this is where you are done installing SQL Server 2012.

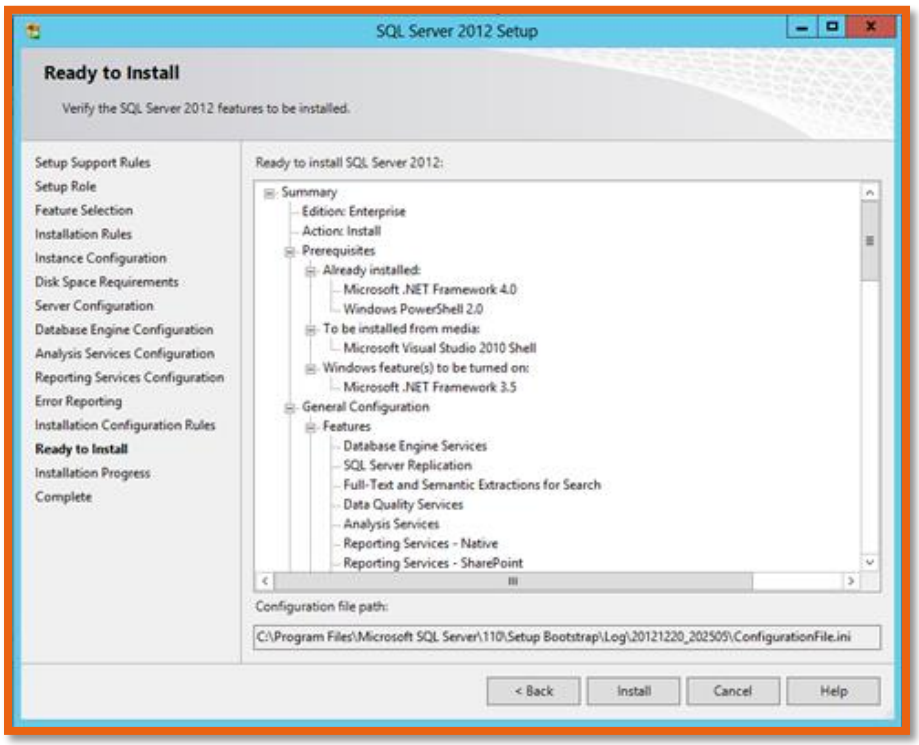

FIGURE 21: INSTALLATION SUMMARY

NOTES

4 System Center Configuration Manager 2012 R2 Preview Installation

4.1 SCCM Supported Configurations

- Supported Configurations for Configuration Manager: http://technet.microsoft.com/en-us/library/gg682077.aspx#BKMK_MinHWReqs
- System requirements for System Center 2012 R2 (as per TechNet & other than the SCCM!): http://technet.microsoft.com/en-us/library/dn281925.aspx

4.2 Supported Base Operating System Editions

- Windows Server 2012 R2 Datacenter Edition
- Windows Server 2012 R2 Standard Edition
- Windows Server 2012 SP1 Datacenter Edition
- Windows Server 2012 SP1 Standard Edition
- Windows Server 2012 Datacenter Edition
- Windows Server 2012 Standard Edition
- Windows Server 2008 R2 SP1 Enterprise Edition
- Windows Server 2008 R2 SP1 Standard Edition
- Windows Server 2008 SP1 Enterprise Edition
- Windows Server 2008 SP1 Standard Edition
- Windows Server 2008 Enterprise Edition
- Windows Server 2008 Standard Edition

4.3 Supported SQL Server Editions

- SQL Server 2008 R2 SP1 Enterprise Edition
- SQL Server 2008 R2 Enterprise Edition
- SQL Server 2008 R2 SP1 Standard Edition
- SQL Server 2008 R2 Standard Edition
- SQL Server 2008 Enterprise Edition
- SQL Server 2008 Standard Edition

4.4 Hardware Considerations for the SCCM 2012 R2

- Reference: Planning for Hardware Configurations for Configuration Manager: http://technet.microsoft.com/en-us/library/hh846235.aspx

4.5 Pre-Requisite Component Check

- Please refer to section 1.1.4 of this document.
- Prerequisites for Endpoint Protection in Configuration Manager: http://technet.microsoft.com/en-us/library/hh508780.aspx
- Prerequisite Checker: http://technet.microsoft.com/library/gg712320.aspx#BKMK_PrerequisiteChecker
- Technical Reference for the Prerequisite Checker in Configuration Manager: http://technet.microsoft.com/en-US/library/hh368980.aspx

4.6 Deployment

Though it seems ordinary to deploy SCCM 2012 R2 in an SQL environment, as I have shown how to install SQL server and get an instance from it through SCCM installation. But if you don't have any SQL server in your company to get an instance out of it, use SQL Express which is built into SCCM 2012 R2. So the installation follows, providing that you have installed ADK, .Net and other feature requirements.

FIGURE 22: INSTALLATION SCREEN

Fire up the setup.hta file which fill present you with the above first screen. Click on the "Install"

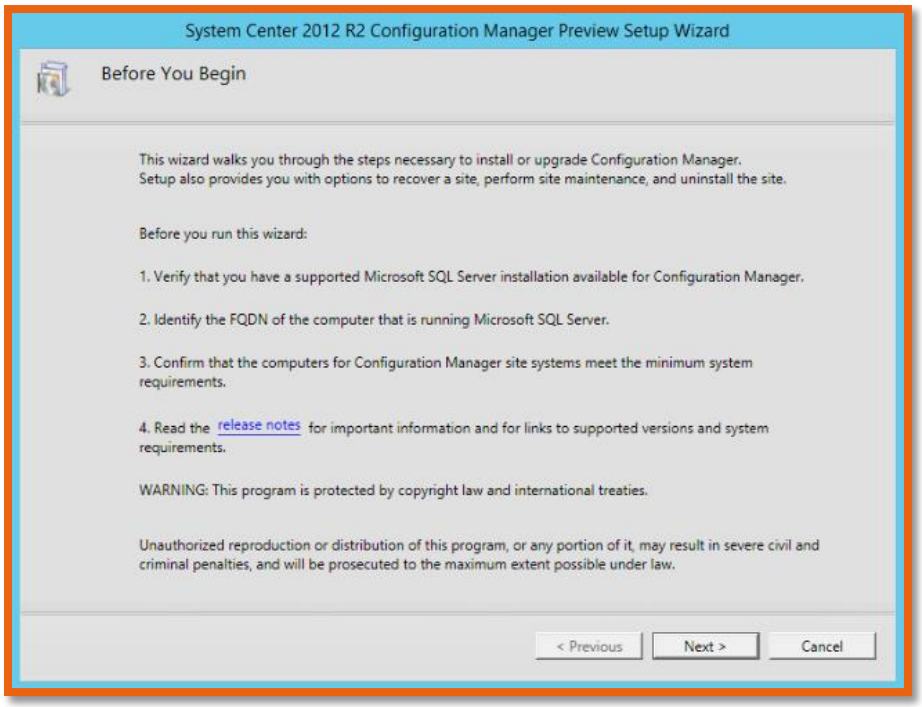

FIGURE 23: THINGS TO CONSIDER

As definitely you should be ready to provide the following information:

- Supported SQL Server already installed or not
- You must know the FQDN name for your domain.
- And all prerequisites are met and accounted for.

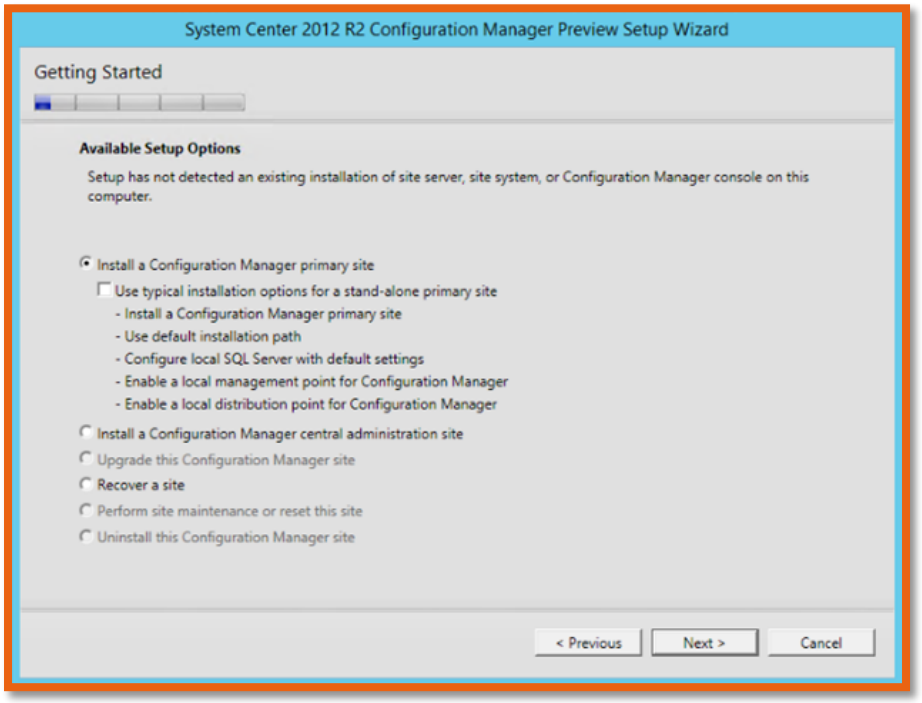

FIGURE 24: GETTING STARTED

This installation is selected for all the basic requirements are in this mode. Select the "Install a Configuration Manager Primary Site" and click on the next button to continue.

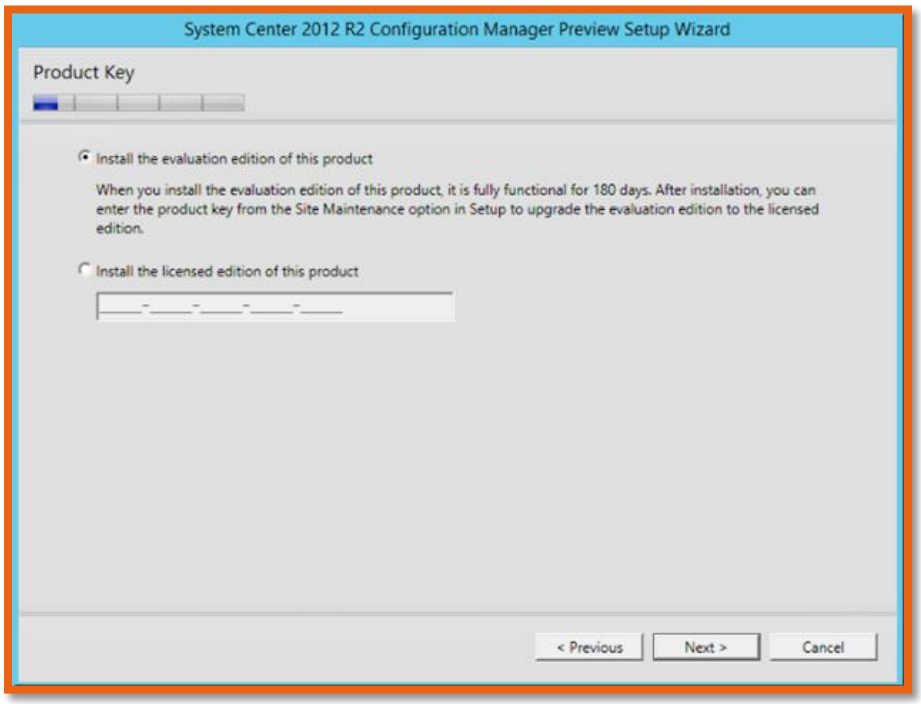

FIGURE 25: INSERT PRODUCT KEY

Do provide the keys if you have any, or make the trial selection and click on the next button to continue.

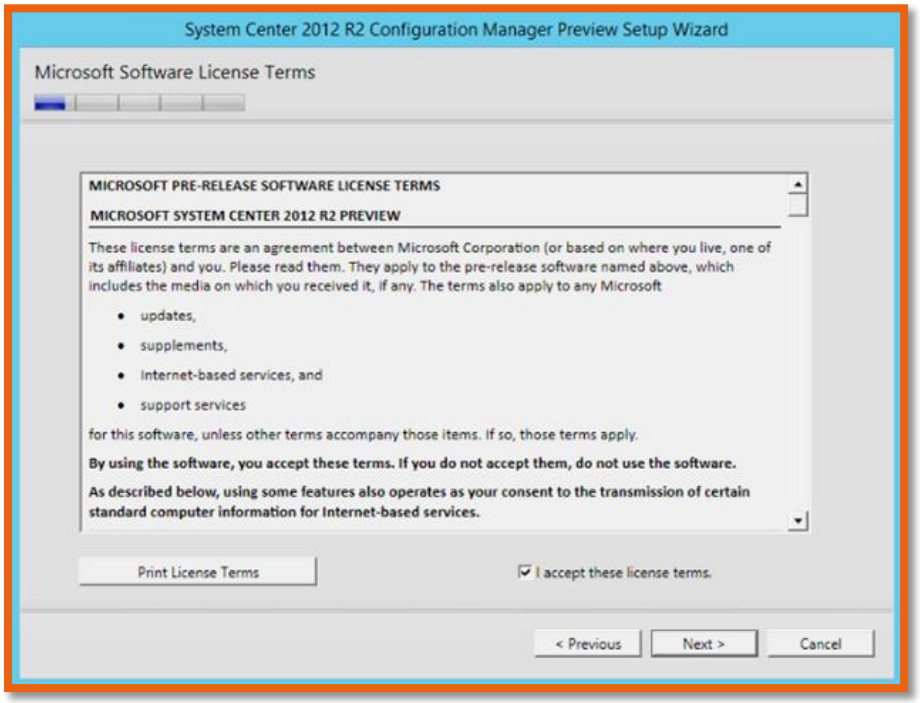

FIGURE 26: ACCEPT LICENSING TERMS

Accept the licensing terms, if you don't accept the terms, the installation will not move forward.

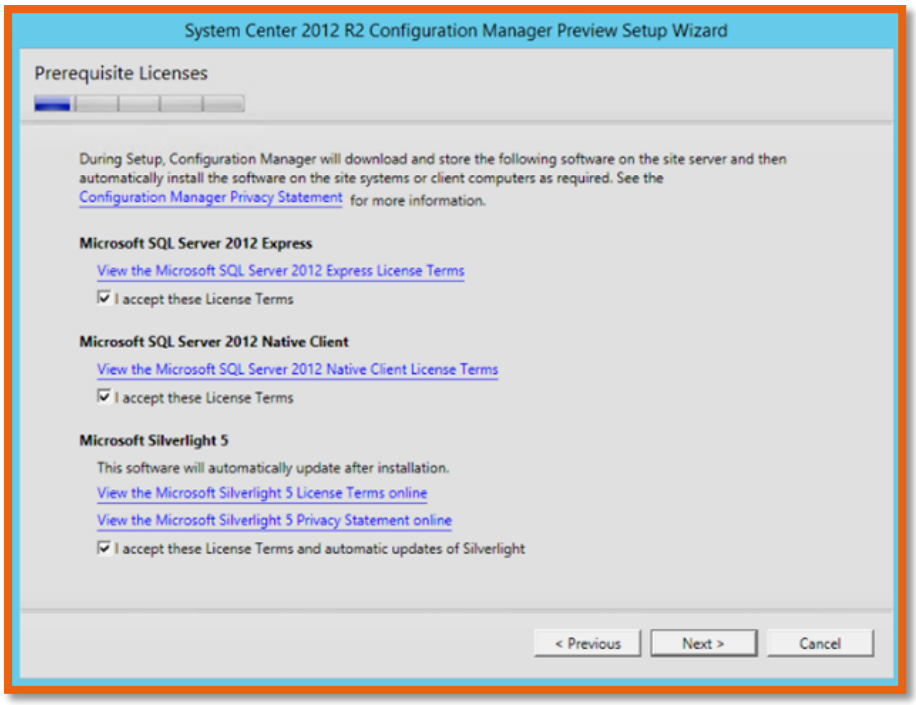

FIGURE 27: PREREQUISITE LICENSES

Now I am selecting the SQL express for the sake of the installation, and SQL 2012 native Client. Please be mindful that Silverlight is required for the web presentation layer view. The latest you have the better it will support all the dashboards, and every layout of the SCCM web interface.

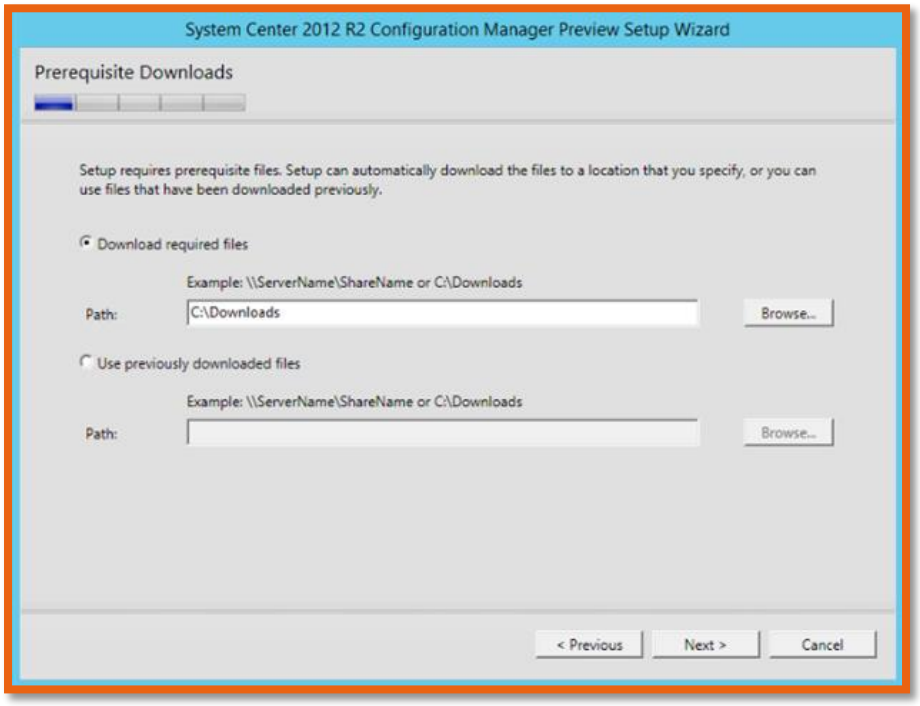

FIGURE 28: DOWNLOAD PREREQUISITES

Download all the required files into a temporary location, I have selected "Downloads" in the boot drive.

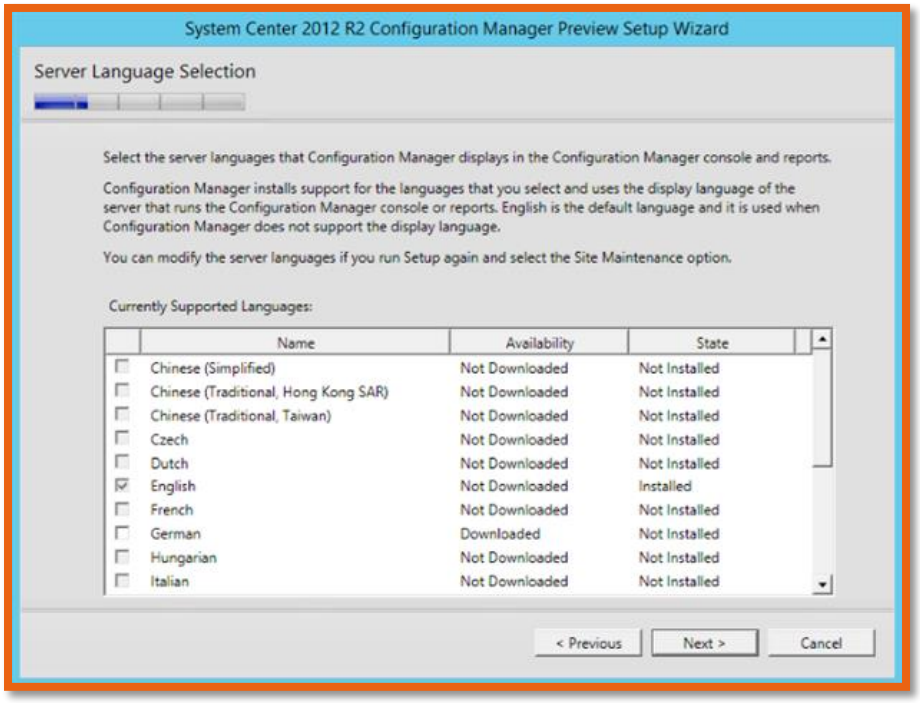

FIGURE 29: SERVER LANGUAGE SELECTION

English is by default selected, if you need other languages to install, select it and click next. This is the server language selection.

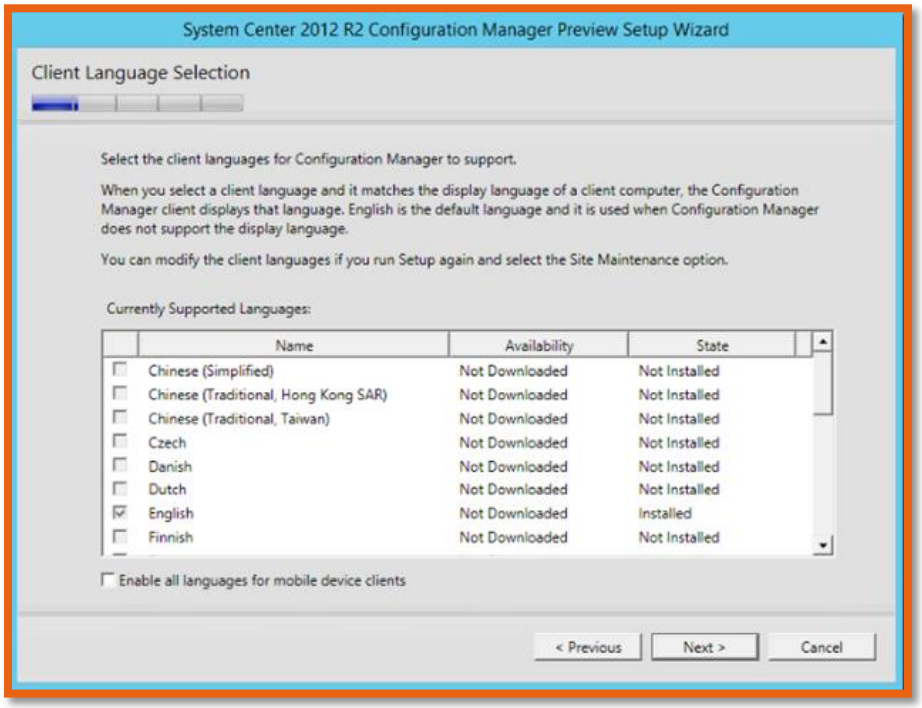

FIGURE 30: CLIENT LANGUAGE SELECTION

This is the client language selection. Click next after finalizing your selection.

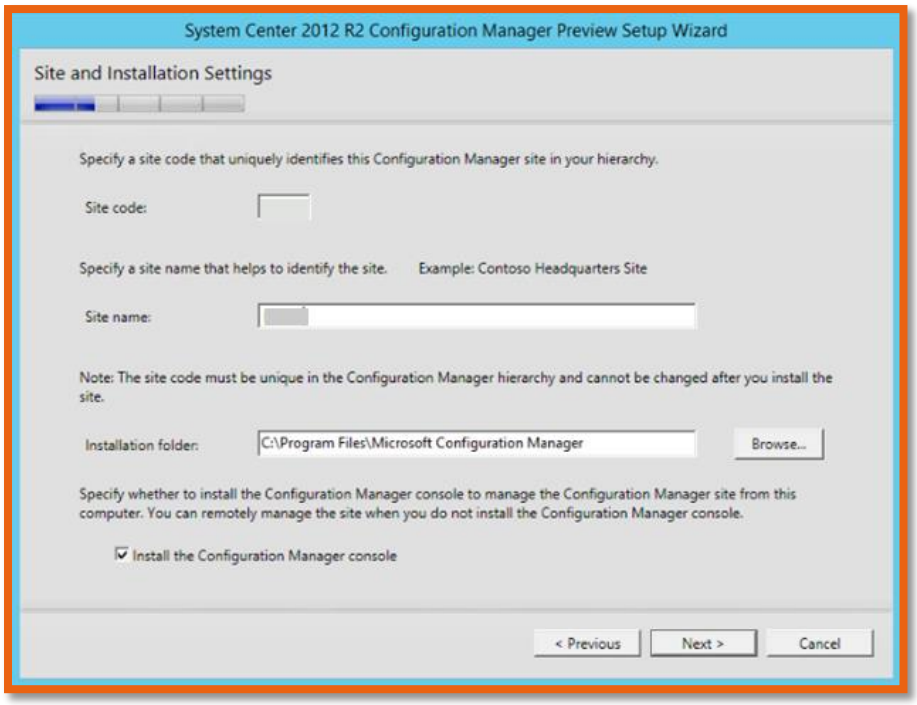

FIGURE 31: SITE SETTINGS

Now this is where you first put in your site code, example RHQ etc. And for site name put in something like "APAC Head Quarter" or which best suits you! Don't forget to install the CM console.

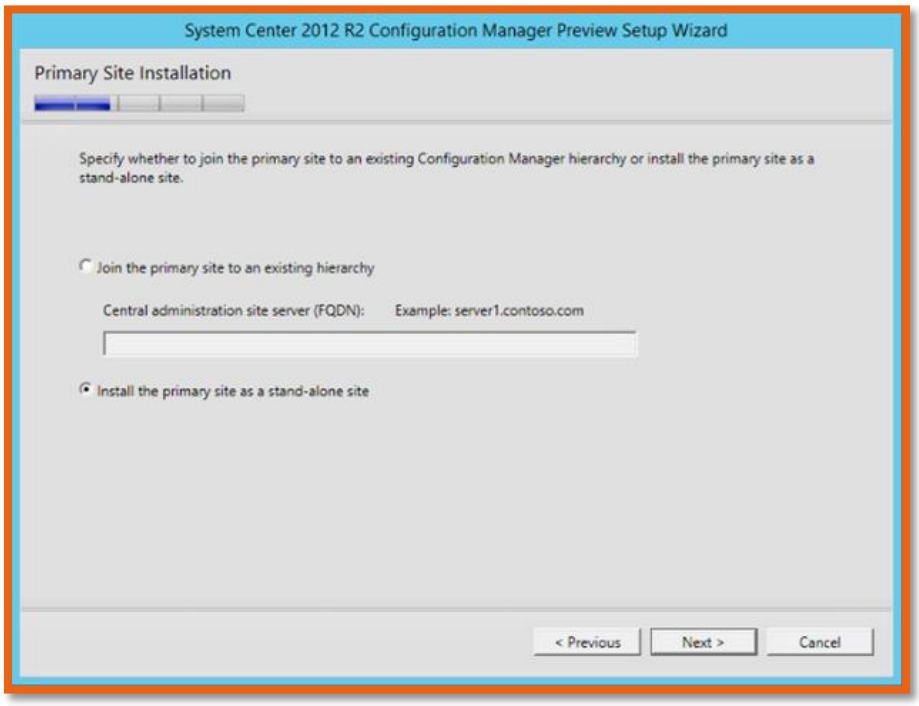

FIGURE 32: PRIMARY SITE FQDN

Since this is the first site, it does not have any hierarchy, but if you already have another SCCM installed and want this one to add it, by all means do at your discretion.

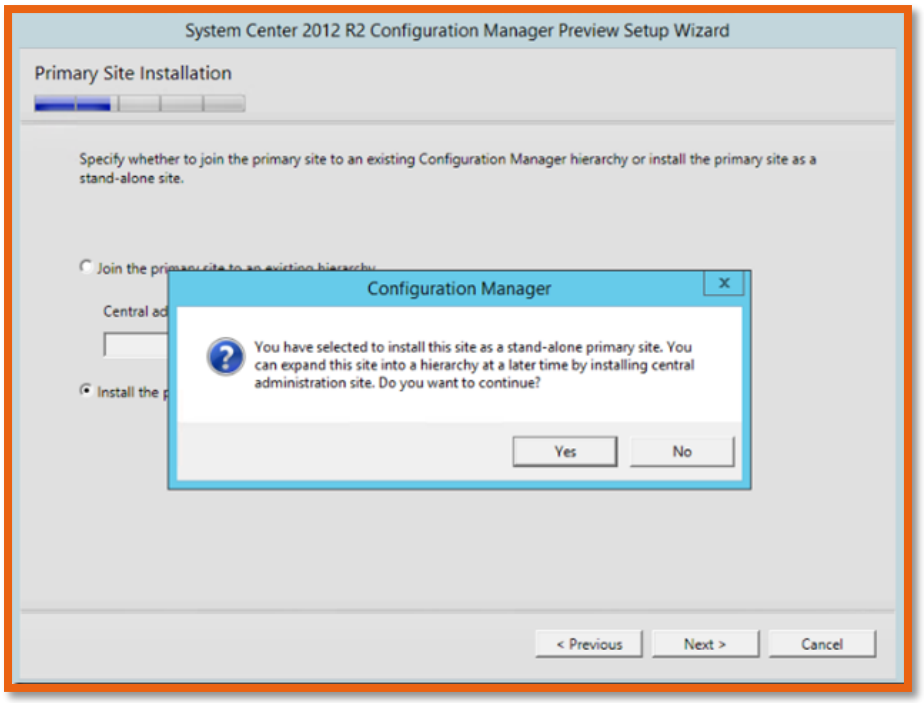

FIGURE 33: SERVER HIERARCHY

And click on the Yes and continue to next step. You really can expand the primary sites, secondary sites at a later time as well.

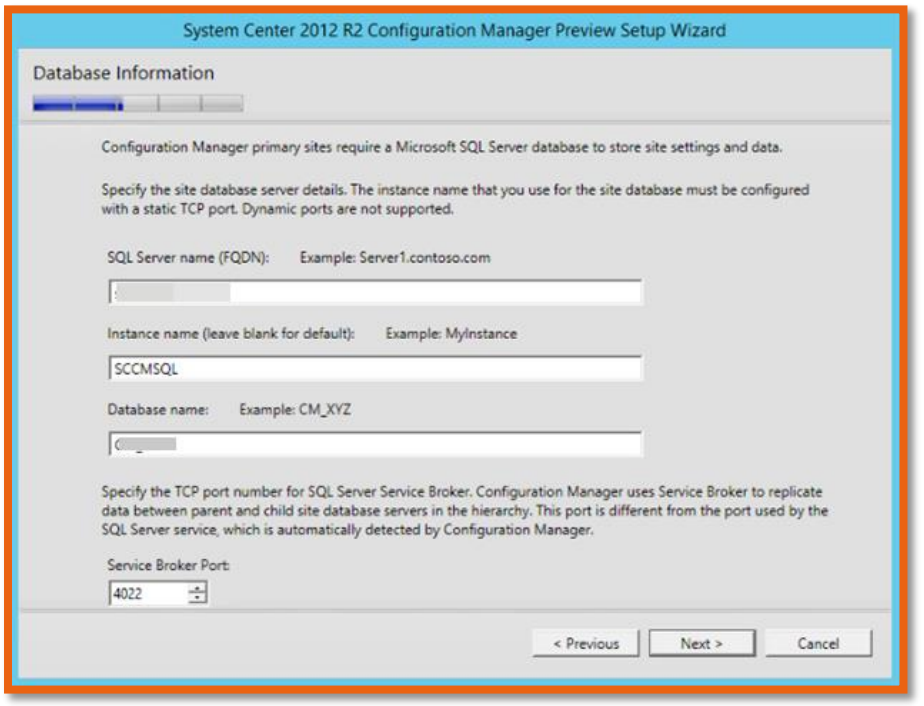

FIGURE 34: DB INFORMATION

Now put in your FQDN address, and the DB name….example : SCCMPDB_RHQ, sounds about right, as SCCM will be having it's Primary DB on this SQL Server on Service Broker Port @ 4022.

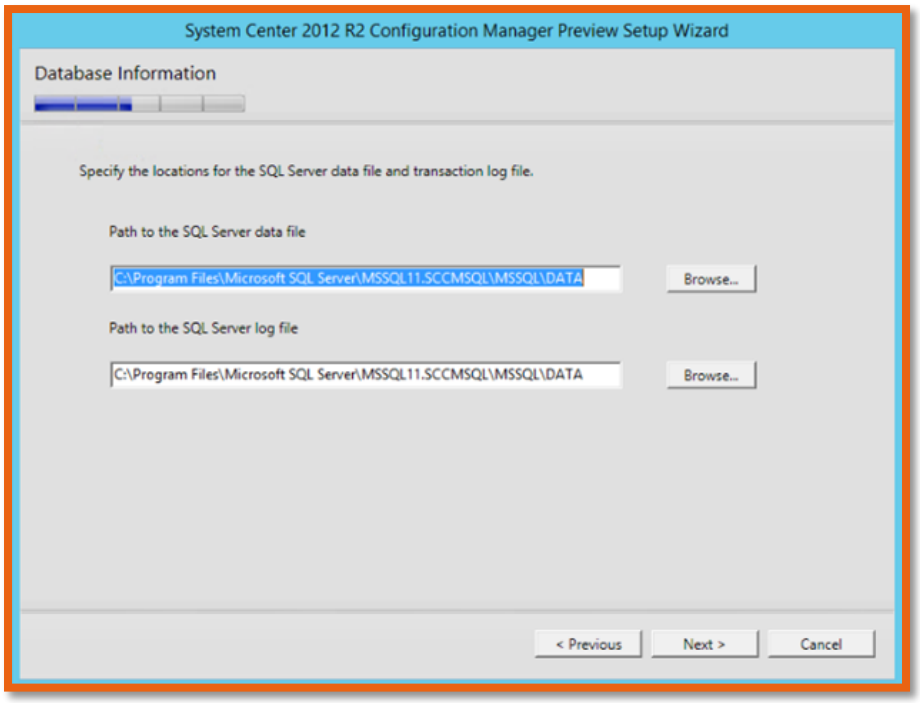

FIGURE 35: DB PATH

If you don't want to change the default path for installation, leave it and move forward.

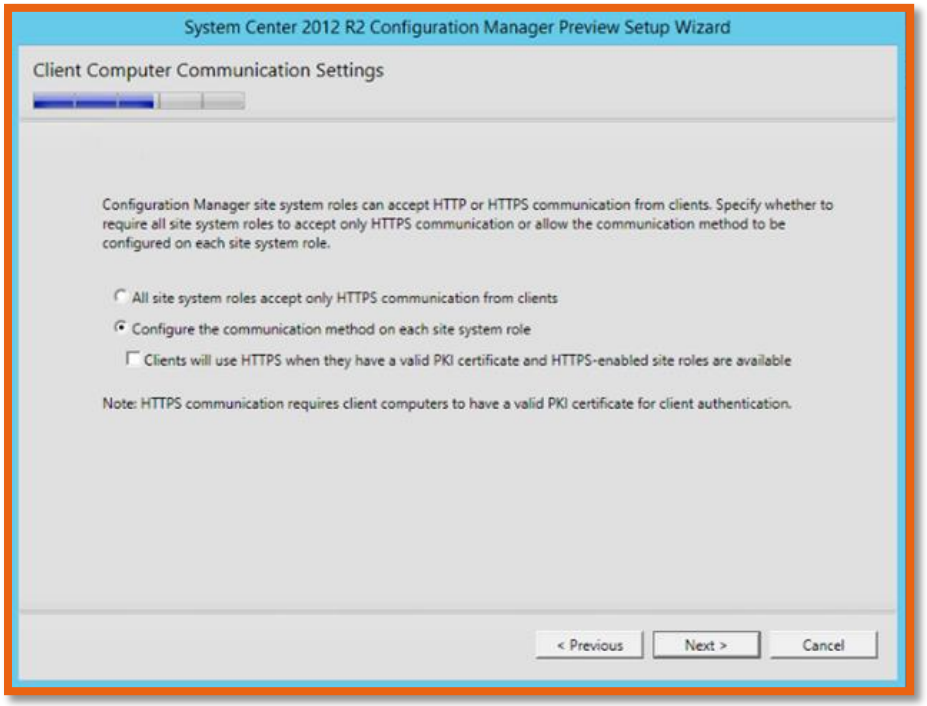

FIGURE 36: CLIENT COMMUNICATIONS

If you have a PKI Infrastructure or Root CA, you might want to check this, as this will ensure and validate each client since HTTPS will ask for the vlid certificate for each client.

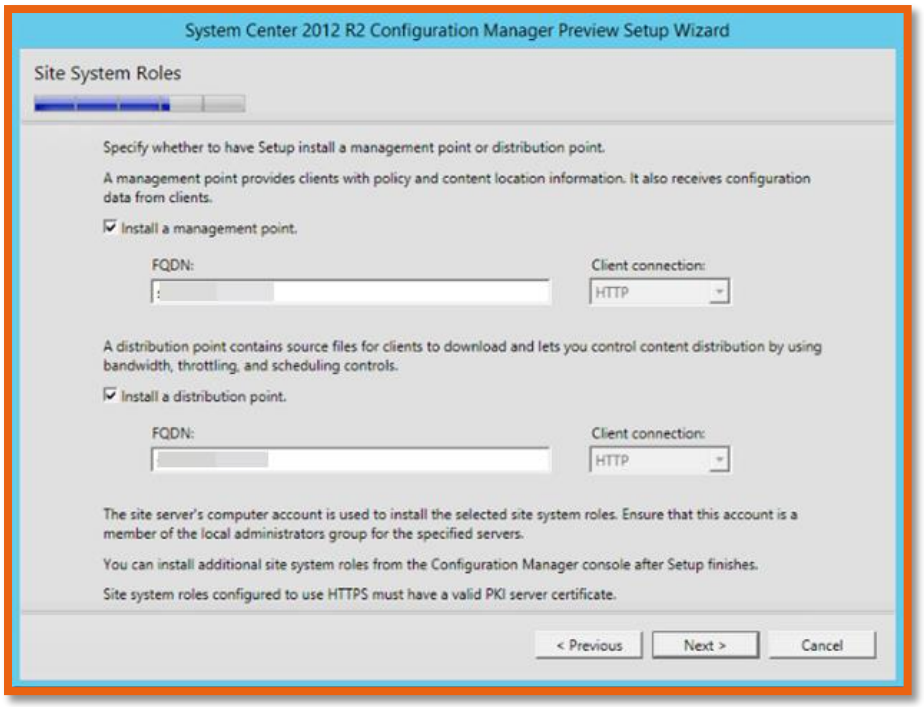

FIGURE 37: SITE SYSTEM ROLES

Again put FQDN for both the fields.

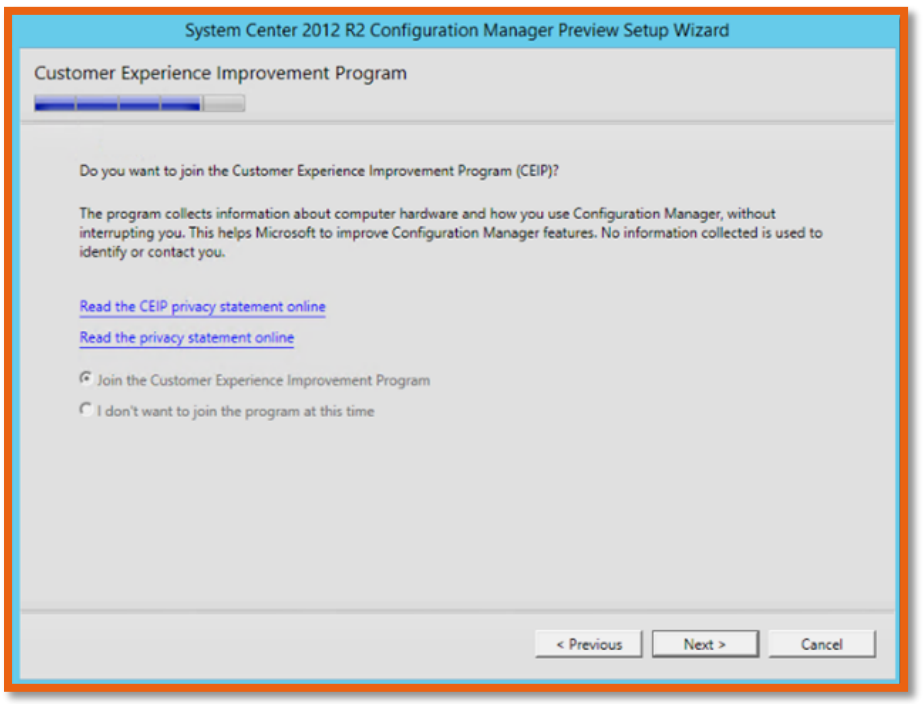

FIGURE 38: CEIP ACCEPTANCE

Join the program and continue.

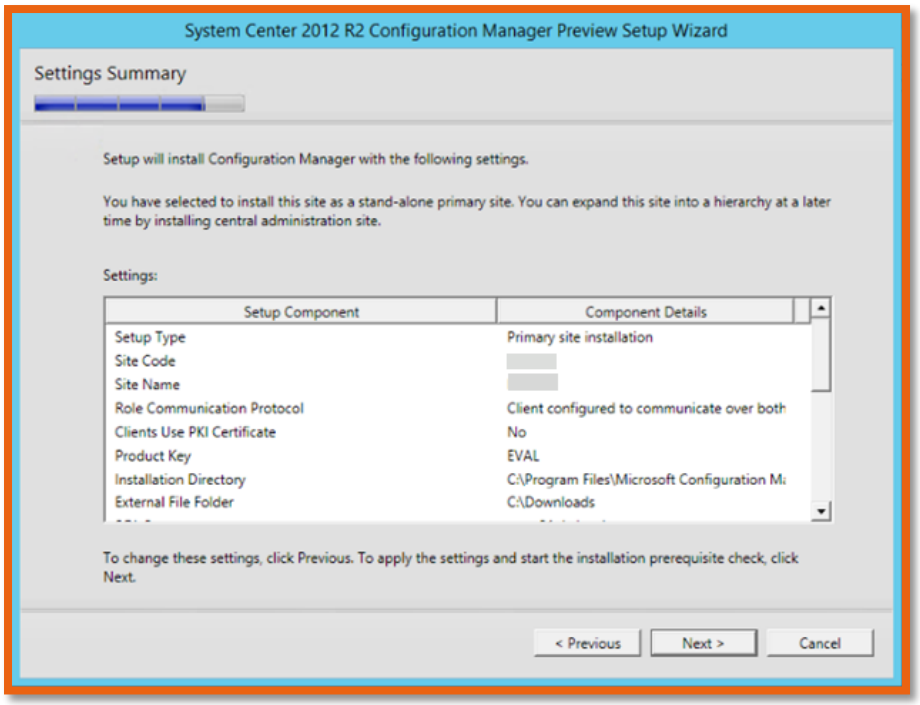

FIGURE 39: SETTING SUMMARY PRIOR DEPLOYMENT

Now SCCM is ready to install and this is the snapshot of the configuration.

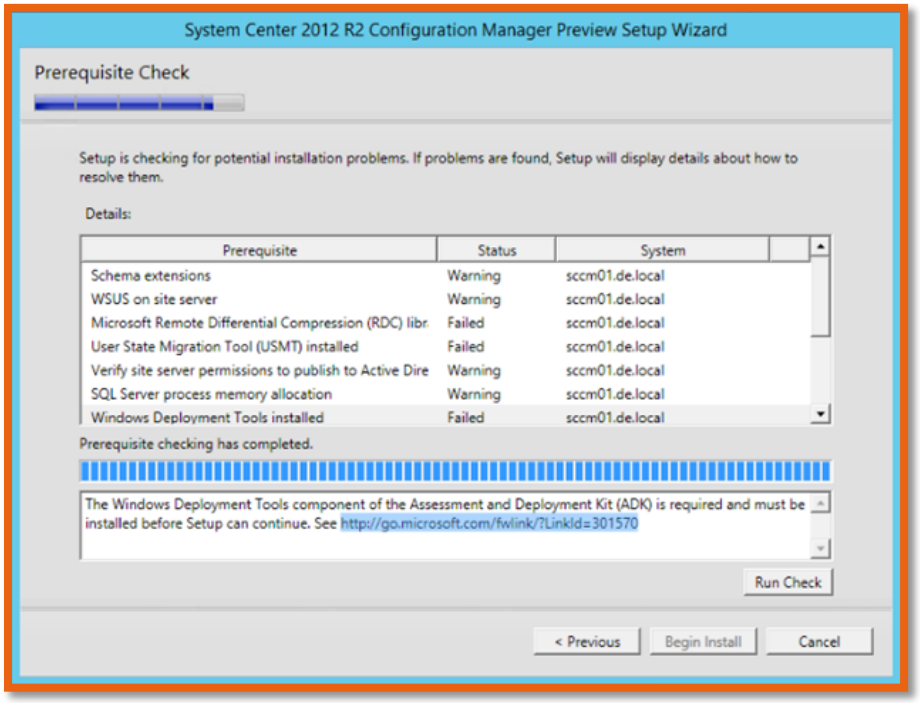

FIGURE 40: PREREQUISITE CHECK

And since we haven't installed the Windows 8.1 ADK, now is a good time to so. After doing that Run Check again.

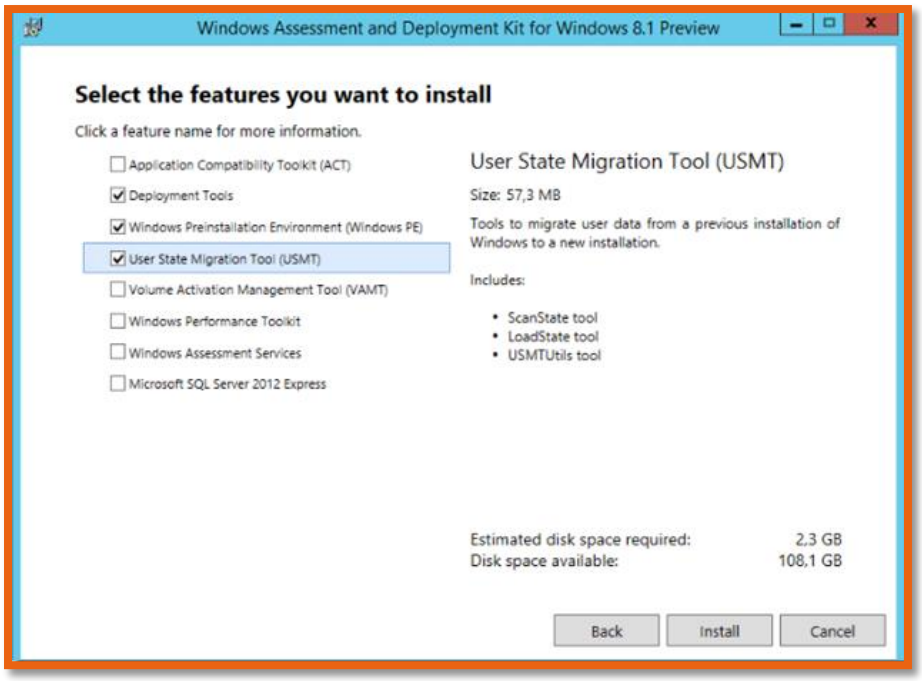

FIGURE 41: ADK INSTALLATION

You will only require the following components for the SCCM to work:

- Deployment Tools
- WinPE
- USMT

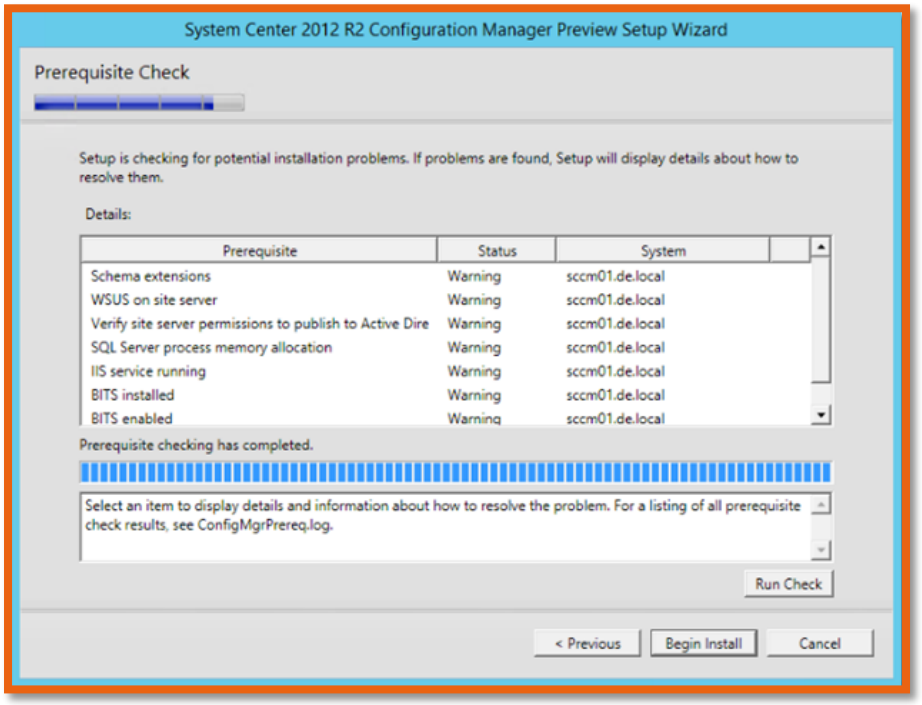

FIGURE 42: PREREQUISITE RE-CHECK

Now we have loads of warnings to install onto a domain controller. Let's begin install SCCM 2012 R2.

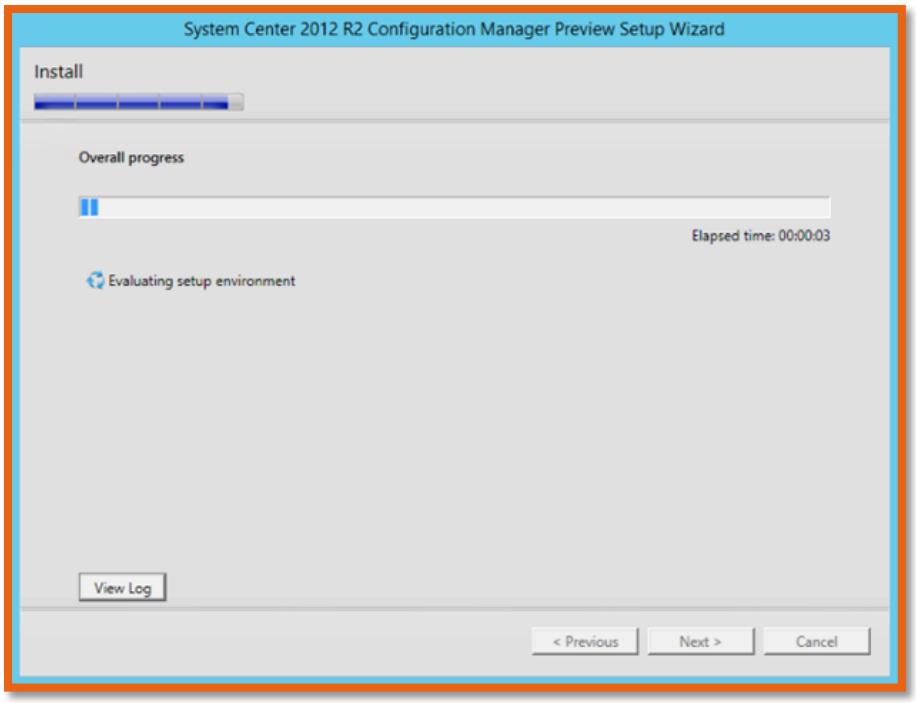

FIGURE 43: ACTUAL INSTALLATION TAKING PLACE

It will take significant amount of time to install, at least half an hour or so.

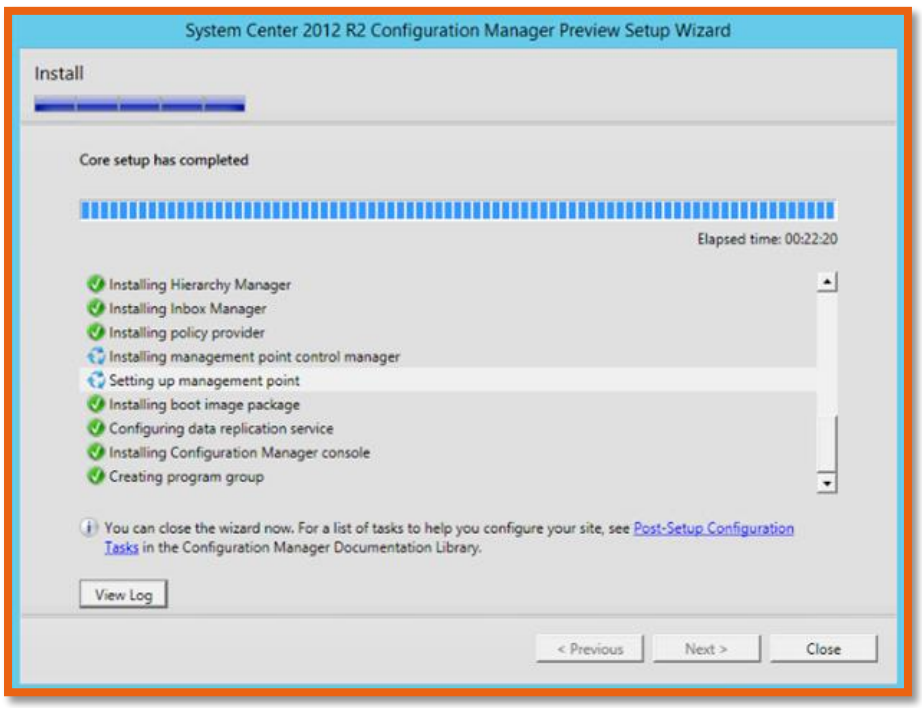

FIGURE 44: SCCM 2012 R2 INSTALLATION COMPLETES

Installation is complete and you are free to run the SCCM console.

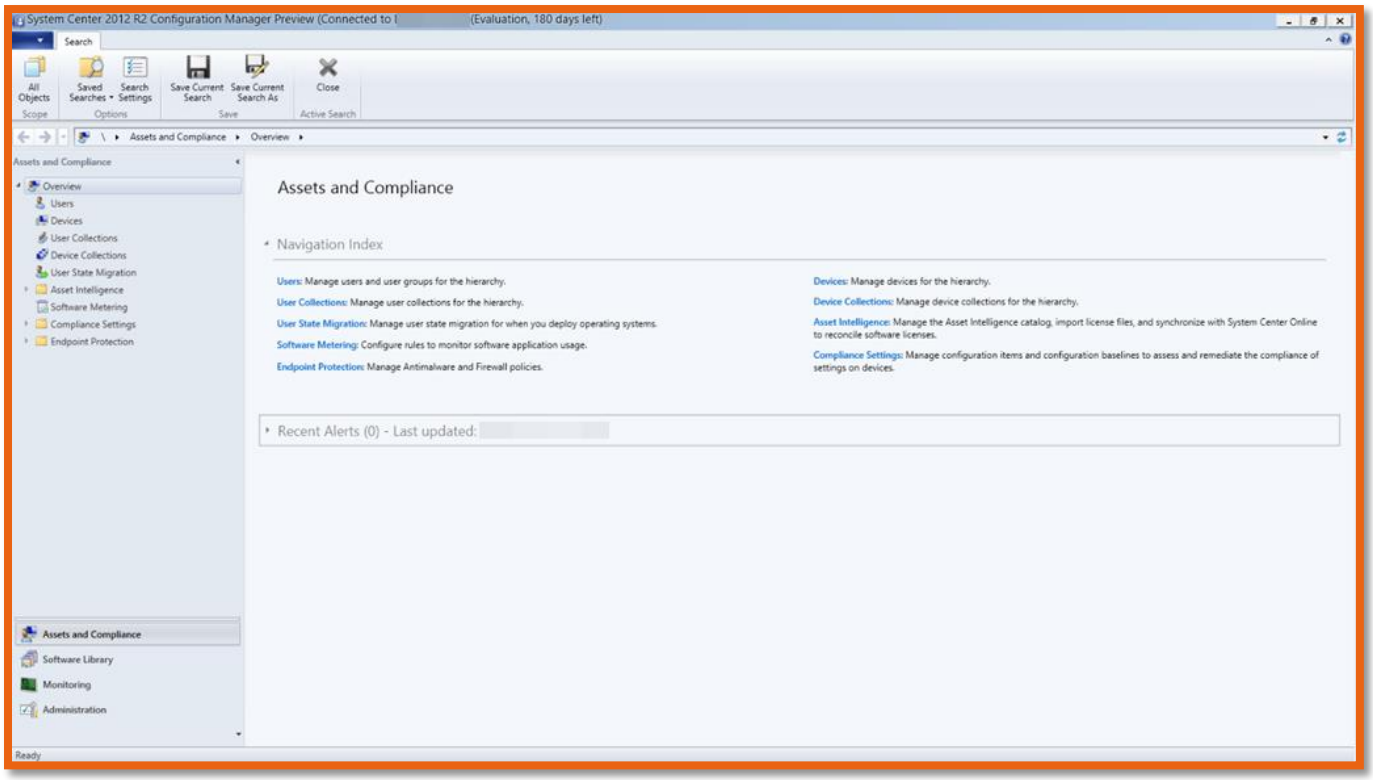

FIGURE 45: SCCM MANAGEMENT CONSOLE

- Blog Site: http://mobs-bd.org
- About Me: http://mobs-bd.org/?page_id=109
- Profile @ Microsoft: https://www.mcpvirtualbusinesscard.com/VBCServer/shuvromcse/profile
- YouTube Training Channel: http://www.youtube.com/user/shuvromcse