A Geeks Guide to the ConfigMgr Hydration Script Collection

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Introduction

This guide takes you through the base setup of a Configuration Manager (ConfigMgr) Current Branch v1606 environment using the ConfigMgr Hydration script collection available on https://github.com/ConfigMgrHydration/Setup.

These scripts are developed and maintained by Johan Arwidmark (@jarwidmark), Henrik Antin (@HenEri), and Johnny Radeck (@Johnny_Radeck).

Guide Requirements

In this guide we assume you have access to virtual machine capable of running ConfigMgr, and you need to have a few service accounts created in Active Directory. See below sections for details:

Virtual Machine Requirement

In this guide, we assume you have a virtual machine *(do not deploy ConfigMgr directly to physical hardware, ever*), with the following configuration:

- OS: Windows Server 2012 R2 or Windows Server 2016 (Support for Windows Server 2016 was first added with the release of ConfigMgr Current Branch v1606).
- RAM: At least 16 GB RAM (minimum supported configuration)
- vCPUs: At least 4
- Disks: At least six disk volumes where DataDisk03-05 are high-speed volumes for the SQL Database files used by ConfigMgr. The SQL Server should always be local; using a remote SQL Server is just dead wrong.
    - OSDisk: 100 GB, (C:): **System**
    - DataDisk01, 100 GB, (E:): **Program Files**
    - DataDisk02, 300 GB, (F:): **Content Library**
    - DataDisk03, 50 GB, (G:): **SQL TempDB**
    - DataDisk04, 100 GB, (H:): **SQL DB**
    - DataDisk05, 75 GB, (I:): **SQL Logs**

In this guide, our domain controller is named DC01 and the primary site server is named CM01. The CM01 server is a member of the corp.viamonstra.com (VIAMONSTRA) domain. The Administrator password is P@ssw0rd.

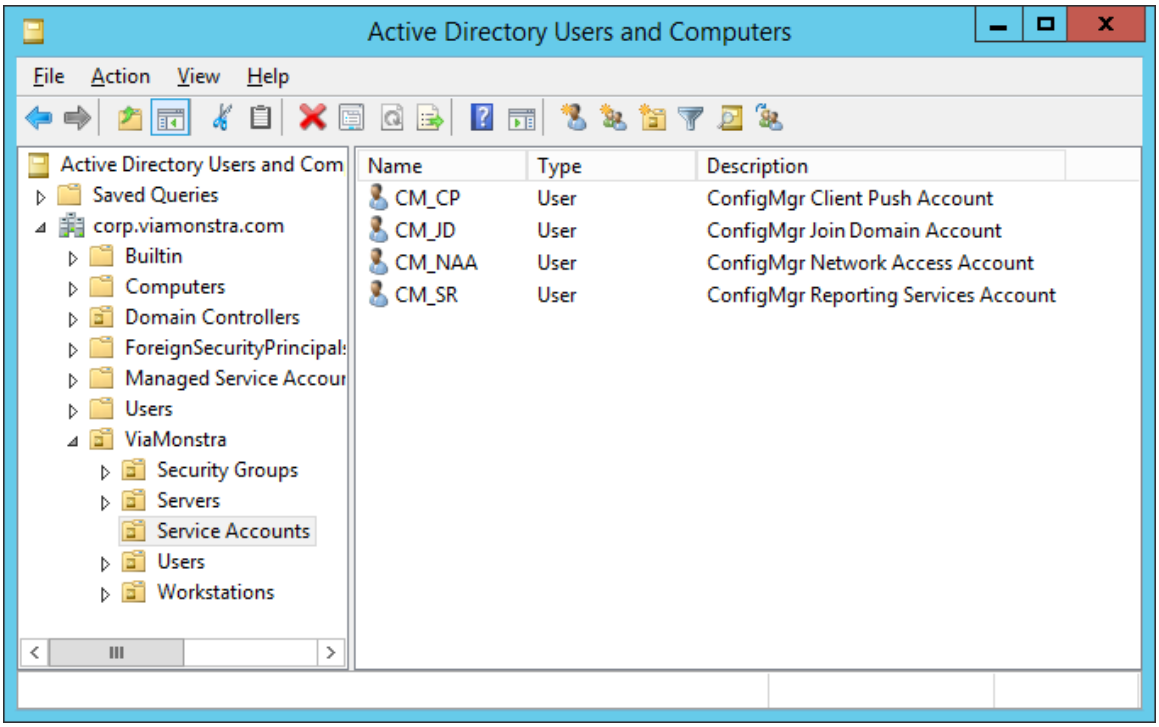
Note: If you are interested in a completely automated build, you can also review the following blog post: http://deploymentresearch.com/Research/Post/485/Hydration-Kit-for-ConfigMgr-2012-R2-SP1-with-SQL-Server-2014-SP1

Service Accounts

In this guide we assume you have created the following service accounts in Active Directory:

- **CM_CP (ConfigMgr Client Push Account)**
- **CM_JD (ConfigMgr Join Domain Account)**
- **CM_NAA (ConfigMgr Network Access Account)**
- **CM_SR (ConfigMgr Reporting Services Account)**

Real World Note: The account used for SQL Reporting Services, CM_SR in our environment, must have "Log on Locally" permissions on the computer hosting the Reporting Services database. E.g. on the site server, CM01. All domain users by default have those permissions, even on domain member servers, but it's very common that organizations, due to security reasons, deny that right for domain users via group policy on their servers.



Service Accounts for ConfigMgr Current Branch.

Step 1 – Extend AD and Create System Management Container

To be able to publish ConfigMgr site information to Active Directory, you need to extend the AD schema and create a system management container. In this guide, we assume you have copied the SMSSETUP\BIN\X64\extadsch.exe file from the ConfigMgr installation media to C:\Setup on DC01, and the Hydration scripts to C:\Setup\Scripts on DC01.

1. On **DC01**, log on as **VIAMONSTRA\Administrator** using the password **P@ssw0rd**.
2. Open an elevated **PowerShell prompt** and extend Active Directory for ConfigMgr by running the following command:

   ```
   C:\Setup\extadsch.exe
   ```

3. In the same elevated **PowerShell prompt**, create the System Management container and grant access to the CM01 site server by running the following command:

   ```
   C:\Setup\Scripts\New-HYDSystemManagement.ps1 –SiteServer CM01
   ```

Step 2 – Install Site Server Prerequisites

The ConfigMgr Site Server requires the installation of a few Windows PreReqs. In this guide, we assume you have copied the Hydration scripts to C:\Setup\Scripts on CM01.

1. On **CM01**, log on as **VIAMONSTRA\Administrator** using the password **P@ssw0rd**.
2. Open an elevated **PowerShell prompt** and install site prerequisites by running the following command:

   ```
   C:\Setup\Scripts\Install-HYDSiteServerPreReqs.ps1
   ```

Step 3 – Install Windows ADK 10 v1607

The ConfigMgr Site Server also requires the installation of Windows ADK 10 v1607 to support the deployment of Windows 10 v1607. In this guide, we assume you have downloaded the Windows ADK 10 v1607 setup files to C:\Setup\Windows ADK 10 v1607

1. On **CM01**, log on as **VIAMONSTRA\Administrator** using the password **P@ssw0rd**.
2. Open an elevated **PowerShell prompt** and install Windows ADK 10 by running the following command:

   ```
   C:\Setup\Scripts\Install-HYDWindowsADK10.ps1
   ```

3. The unattended Windows ADK 10 setup runs without a visible UI but you can view the progress by reviewing the setup logs in **C:\Users\Administrator.VIAMONSTRA\AppData\Local\Temp\adk**.

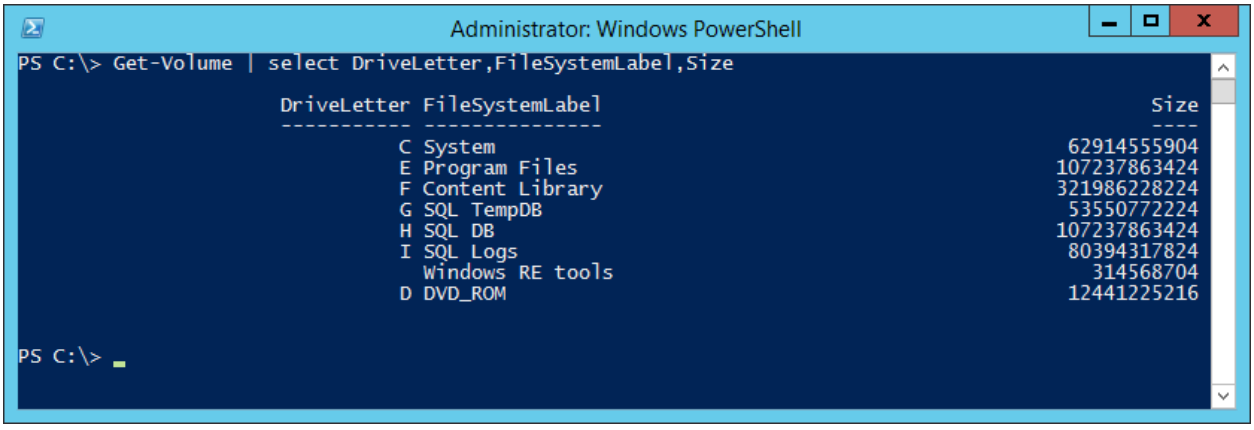
Step 4 – Verify the data disk volumes

The primary site server for ViaMonstra (CM01) uses six volumes in total: one for the operating system, and five for SQL Server and ConfigMgr. On **CM01**, log on as **VIAMONSTRA\Administrator** using the password **P@ssw0rd**.

1. Open an elevated **PowerShell prompt** and get the disk volumes, by running the following command:

   ```
   Get-Volume | select DriveLetter,FileSystemLabel,Size
   ```

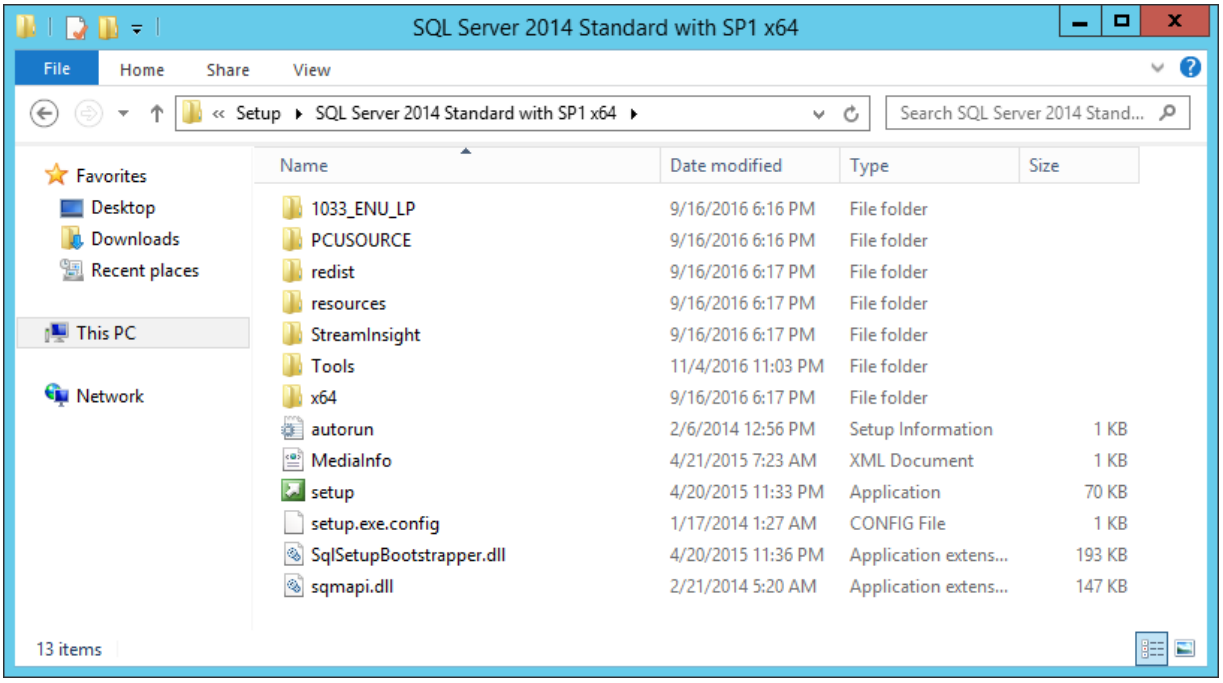
2. Verify that you have the following five data disk volumes:
   - 100 GB, (E:): **Program Files**
   - 300 GB, (F:): **Content Library**
   - 50 GB, (G:): **SQL TempDB**
   - 100 GB, (H:): **SQL DB**
   - 75 GB, (I:): **SQL Logs**



Using PowerShell to review the volumes.

Step 5 – Install SQL Server 2014 Standard SP1

In this guide, we assume you have copied the SQL Server 2014 Standard with SP1 setup files to C:\Setup\SQL Server 2014 Standard with SP1 x64 on CM01, and the Hydration scripts to C:\Setup\Scripts on CM01.



SQL Server 2014 SP1 copied to C:\Setup\SQL Server 2014 Standard with SP1 x64.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt** and install SQL Server by running the following command:

   ```
   C:\Setup\Scripts\Install-HYDSQLServer2014.ps1
   ```

3. When the SQL Server 2014 with SP1 setup is complete, review the **Summary.txt** setup log file found in **C:\Program Files\Microsoft SQL Server\120\Setup Bootstrap\Log**.

Step 6 – Configure SQL Server Memory

If you are using the minimum supported configuration of 16 GB of RAM on the CM01 virtual machine, you should configure SQL Server memory between 8 GB and 12 GB (you typically need to reserve at least 4 GB to the ConfigMgr processes and Windows). If you have more memory on your server, adjust the SetHYDSQLServerMemory.sql script.

1. On **CM01**, log on as **VIAMONSTRA\Administrator** using the password **P@ssw0rd**.
2. Open an elevated **PowerShell prompt** and configure SQL Server memory by running the following command (the command is wrapped and should be one line):

   ```
   Invoke-Sqlcmd -InputFile
   C:\Setup\Scripts\Set-HYDSQLServerMemory.sql
   ```

Note: If you just installed SQL Server 2014 and are using the same PowerShell prompt as you used to run the setup, you need to exit it and open it again (elevated) for the SQL PowerShell cmdlets to be available.

Step 7 – Configure SQL Database Files

Before installing ConfigMgr, you should pre-create the SQL database file for ConfigMgr, as well as configure additional database files for the TempDB. You need to modify the New-

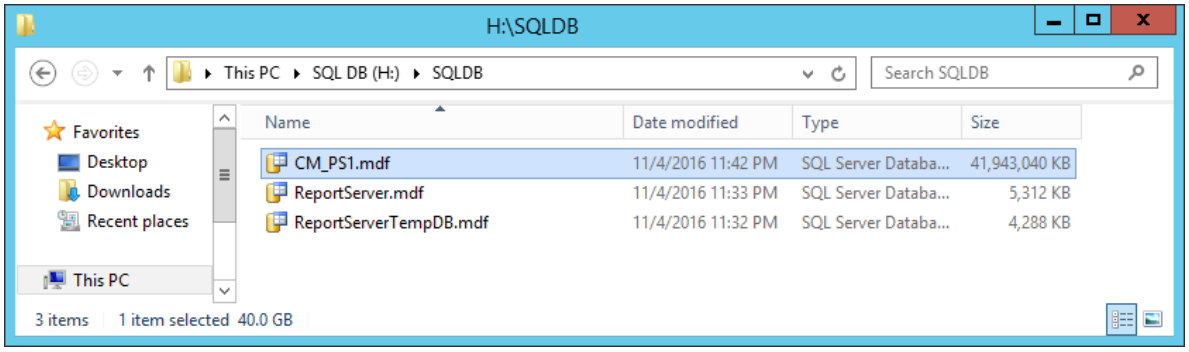
HYDConfigMgrDatabase.sql to reflect your environment. The sample creates a 40 GB Database file for ConfigMgr and four TempDB files, each 4 GB in size.

Real World Note: Creating additional TempDB files is critical for ConfigMgr database performance. Creating additional files for the ConfigMgr database itself is not needed.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt** and create the four SQL database files for ConfigMgr by running the following command (the command is wrapped and should be one line):

```
Invoke-Sqlcmd -QueryTimeout 0
-InputFile C:\Setup\Scripts\New-HYDConfigMgrDatabase.sql
```

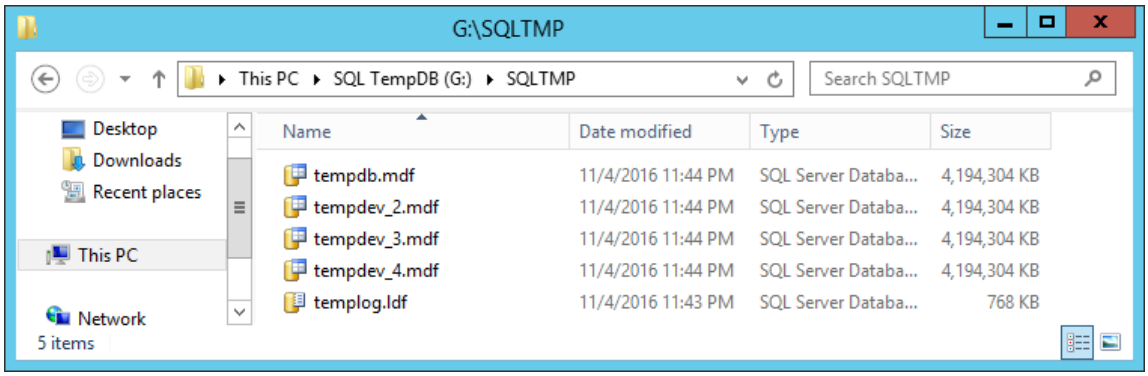
Note: Setting QueryTimeout to 0 means no timeout. The default timeout (30 seconds) is often not enough to create the databases, especially if the disk subsystem is slow.



The Configuration Manager database file created.

3. In the same elevated **PowerShell prompt**, create the additional SQL TempDB database files and set their initial size to a total of 16 GB by running the following command (the command is wrapped and should be one line):

```
Invoke-Sqlcmd -QueryTimeout 0
-InputFile C:\Setup\Scripts\Set-HYDSQLTempDB.sql
```



The SQL TempDB database files.

Step 8 – Configure ConfigMgr Database Log Files

You should set a maximum log file size (called CAP the log file) for the ConfigMgr Database. In this guide you set the maximum log file size to 10 GB.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt**, and CAP the ConfigMgr Database Log file by running the following command (the command is wrapped and should be one line):

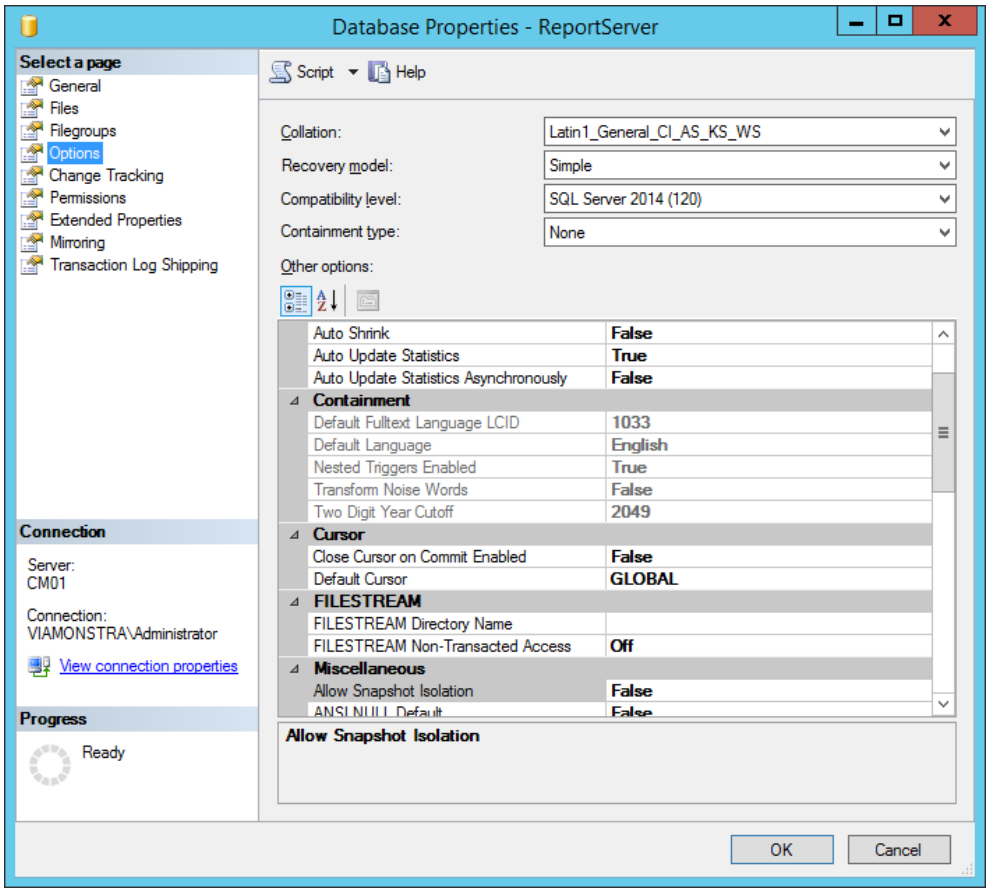
```
Invoke-Sqlcmd -QueryTimeout 0
-InputFile C:\Setup\Scripts\Set-HYDConfigMgrDatabase.sql
```

Step 9 – Configure Reporting Services Databases

You should set a maximum log file size (10 GB in this scenario) for the Reporting Services databases (ReportServer and ReportServerTempDB), as well as configure the ReportServer database for simple recovery mode.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt**, and configure the Reporting Database by running the following command (the command is wrapped and should be one line):

```
Invoke-Sqlcmd -QueryTimeout 0
-InputFile C:\Setup\Scripts\Set-HYDReportingDatabases.sql
```



Reporting Services database configured for simple recovery model.

Step 10 – Install Configuration Current Branch v1606

In this guide, we assume you have downloaded the following to CM01:

- **ConfigMgr Current Branch v1606.** Copied to **C:\Setup\ConfigMgr**.
- **ConfigMgr Current Branch v1606 prerequisites.** Copied to **C:\Setup\ConfigMgrDL**.

Note: To download the ConfigMgr Current Branch prerequisites, run the SMSSETUP\BIN\X64\Setupdl.exe application from the ConfigMgr installation files, specify a temporary download folder, and click Download.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt** and install **ConfigMgr Current Branch** by running the following command:

   ```
   C:\Setup\Scripts\Install-HYDConfigMgr.ps1
   ```

3. When setup is complete (watch the setup.exe and setupwpf.exe processes), review the **C:\ConfigMgrSetup.log** file. The file should report a successful setup.

Step 11 – Configure Discovery Methods

Discovery methods enable the ConfigMgr site to query Active Directory to locate IP subnets, Active Directory sites, and system information. You will use this information to create boundary groups in the next section.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt** and configure **Active Directory Forest Discovery** by running the following command:

   ```
   C:\Setup\Scripts\Set-HYDEnableADForestDiscovery.ps1
   ```

Note: If the script fails to run, close the PowerShell prompt, then start a new PowerShell prompt via the ConfigMgr console, close it, open a new "normal" elevated PowerShell prompt, and then run the script again.

3. In the same elevated **PowerShell prompt**, verify that the boundaries are created as part of enabling Active Directory System Discovery by running the following command (it may take some time for the boundaries to be created):

   ```
   Get-CMBoundary
   ```

4. In the elevated **PowerShell prompt**, configure **Active Directory System Discovery** by running the following command:

   ```
   C:\Setup\Scripts\Set-HYDEnableADSystemDiscovery.ps1
   ```

Step 12 – Create a Boundary Group

To make sure clients can locate content on the distribution point and find the management point, you configure a boundary group.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt** and create a boundary group by running the following command:

   ```
   C:\Setup\Scripts\New-HYDBoundaryGroup.ps1
   ```

Step 13 – Create a file system folder structure

For a lab and test environment, it is perfectly fine to store packages and applications locally on the site server. In production, you should store them in a DFS share or other file server.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt** and create the folder structure by running the following command:

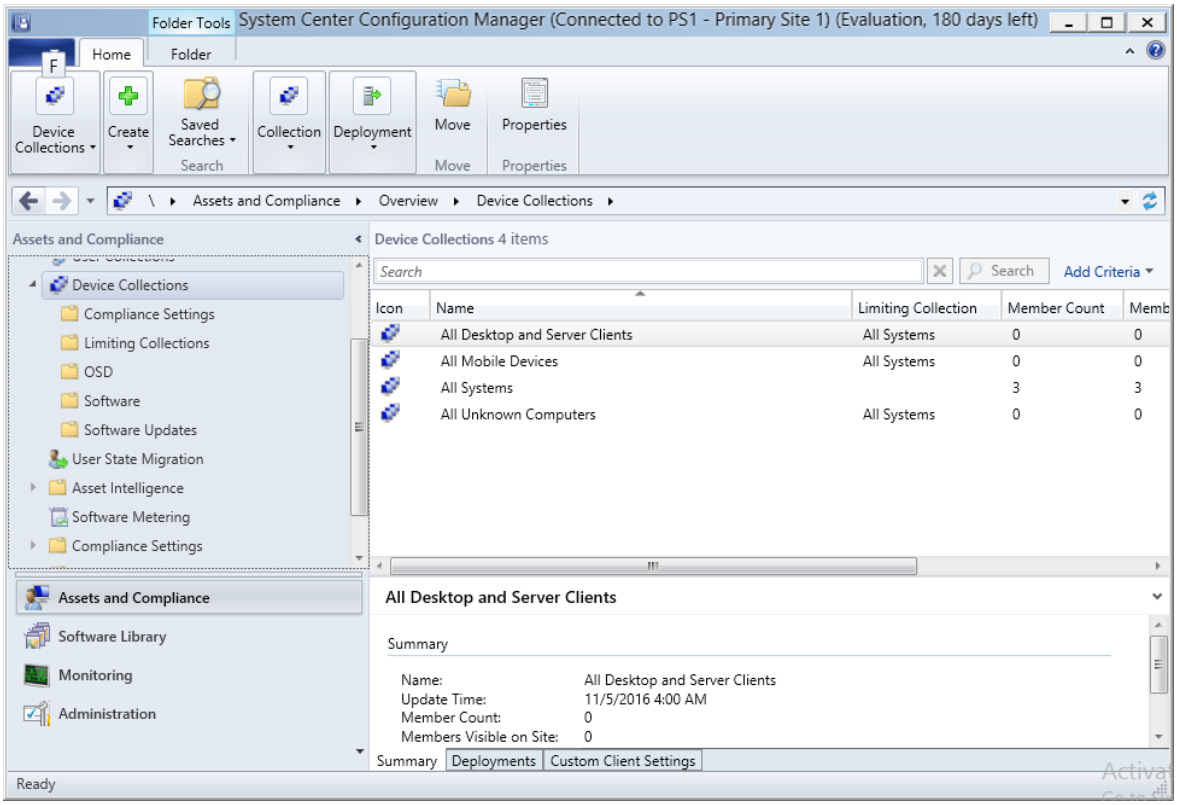
   ```
   C:\Setup\Scripts\New-HYDConfigMgrSourceStructure.ps1
   ```

Step 14 – Create a ConfigMgr Console folder structure

In the ConfigMgr console, it helps to have a good logical folder structure for device collections.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt**, and create a ConfigMgr console logical folder structure by running the following command:

   ```
   C:\Setup\Scripts\New-HYDConfigMgrConsoleFolderStructure.ps1
   ```



Logical folder structure in the ConfigMgr console.

Step 15 – Configure a ConfigMgr Network Access Account

To support OS Deployment, you need to configure a network access account. In our environment, it is the VIAMONSTRA\CM_NAA account.

1. On **CM01**, log on as **VIAMONSTRA\Administrator**.
2. Open an elevated **PowerShell prompt**, and create a ConfigMgr network access account by running the following command (the command is wrapped and should be one line):

```
C:\Setup\Scripts\New-HYDNetworkAccessAccount.ps1 -SiteCode PS1
-UserDomain VIAMONSTRA -UserName CM_NAA
-UnencryptedPassword P@ssw0rd
```

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- Johan Arwidmark: @jarwidmark