# SCCM 2012 Extended System Discovery V3 – Oct 2016

## Summary

Replace the V1 of the Extended System Discovery RunBook with V3 which is a PowerShell script launched from a daily scheduled task.

Version 2 has introduced the following changes

* This script and all future PowerShell scripts are now designed to run from RESSWCMSTMP02 as a scheduled task
* Script parameters are now used so that all environments will use the same script
  + SiteServer – SCCM CAS Site Server name
  + SiteCode – SCCM CAS Site Code
  + InstanceName – Used for separation of the three environments (DEV, TEST, PROD)
* Included function to lookup the SCCM SQL Server Name and SCCM Database Name to account for differences in DB naming standards between our environments
* Replaced the SCCM Client WMI lookup function with a SQL lookup function to improve performance
* Included the SCCM Client GUID in the DDR if it is identified. This should help to resolve scenarios where there are two systems discovered in SCCM with the same name
* Included the Discovery Method property into SQL logging to identify which script is generating DDRs
* Code implemented to allow all environments to share the same temp DDR folder.
* Temporary DDRs for this script are now created in their own folder instead of a folder shared with other discovery scripts. ( C:\Temp\ExtendedSystemDiscovery\TempDDRs )
* The necessary version of the SMSRSGEN.DLL from the SCCM SDK is now loaded from a common location C:\TEMP\SMSRSGEN to help avoid issues with other scripts using different versions of this DLL
* Added the use of a DDR property called ADDPROP\_NAME for the Netbios Name field which now eliminates duplicate record creation when no SMS GUID is supplied to the DDR
* Excludes using the SMS Unique Identifier and the two company machine attributes in the DDR if they are empty

**About Extended System Discovery**

There are times when our SCCM 2012 Active Directory System Discovery data is missing or is inaccurate for some clients. The most important piece of discovery data is the Distinguished Name which represents where in the Active Directory OU structure a system is located. This property is heavily used in SCCM for determining which region or company entity should be managing the client. A system that is missing its Distinguished Name in SCCM will generally be unmanaged and often unaccountable to anyone. At one time though, that system was discovered with a DNS record or it submitted an SCCM client status message to SCCM. Even though we cannot get current AD information for some systems through the default SCCM mechanism, it does not prevent us from fixing that information in SCCM through another process such as a script.

Additionally, we also want to ensure that the custom AD attributes named companyAttributeMachineCategory and companyAttributeMachineType are correct. Not all systems use these properties but if a system is missing its distinguished name it is likely that this data could be missing as well. Since this data is important to identify potentially critical systems, we also want to ensure that the SCCM data for these systems matches Active Directory therefore this data will also be synchronized to match AD whenever a Distinguished Name is fixed.

Below are the reasons we have systems in SCCM with AD discovery information that is missing or does not match AD. Some of this missing data can be fixed using the RunBook and the reports it generates can be used to resolve any remaining underlying issues such as decommissioned systems.

1. The system has been decommissioned and has been removed from Active Directory but not SCCM
2. The system is active but was removed, moved or renamed in AD
3. The system is in a Windows Workgroup or a domain that SCCM is not configured to manage
4. The system is not properly added to the domain/network
5. There is no DNS record for the client   
   - There is a firewall issue between the client and the domain’s network server   
   - There is a communication issue between SCCM and the DNS server for a domain’s network server  
   - The system has been offline too long and lost its domain trust  
   - DNS needs to be configured to provide name resolution for that system/subnet  
   - DNS A Record was deleted or aged out due to the client being offline or off network too long

**Example of a Distinguished Name**

CN=114INTELLEX1,OU=Workstations,OU=Genzyme,DC=genzyme,DC=com

**Examples of the two companyAttributes**

|  |  |
| --- | --- |
|  |  |
| MachineType | MachineCategory |
| GXP-LABPC | NON-STANDARD |
| IA-HOL | NON-STANDARD |
| LABPC | NON-STANDARD |

**Solution Process**

To resolve this issue we have created a script that will synchronize SCCM data with Active Directory for SCCM records which are missing their Distinguished Name value. It will be executed automatically through a daily scheduled task.

* Identify SCCM clients that are missing their distinguished name
* Find the client by name, searching in all domains managed by SCCM
* Get their AD data for Distinguished Name, companyAttributeMachineCategory and companyAttributeMachineType
* Write a custom SCCM Data Discovery Record ( .DDR file ) for each of the identified systems that includes the correct data from AD
  + Write data changes to a time stamped SQL table record for logging that includes the computer name, SMS GUID if available, the old incorrect data and the new corrected data
* Write a log file in the script location that records the script processing and logic when it is run
* Copy the generated DDR files to the appropriate SCCM site server for processing

Note: Not all systems that have the SCCM client are actually part of an Active Directory Domain and may be in a non-managed domain, in a local workgroup or deleted from Active Directory. These systems have no Distinguished Name to be discovered and therefore we will always have some client systems showing as missing their Distinguished Name.

A report has been created to view the contents of the change logging table for Extended System Discovery   
<http://xspw10w201w/Reports/Pages/Report.aspx?ItemPath=%2fEnterprise%2fSystem+Center+Infrastructure+Reports%2fExtended+System+Discovery+Logging>

## Business Case

Ensure that critical data used for administration of clients within SCCM is correct

## Systems Impacted

SCCM 2012 Production

## Service Impact Assessment

* What is the business impact?
  + No business impact.
* Where is the business/end users located?
  + The SCCM data will be corrected for all systems in all domains that have incorrect data in SCCM.
* Where is the location of activity (where the CI's are located)?
  + This will be executed from RESSWCMSTMP02 as a scheduled task which accesses both the SCCM 2012 PROD CAS.
* What is the scheduling and length of the actual outage/performance degradation?
  + There will be no outage and the RunBook will be scheduled to run weekly
* Is the appropriate communications planned before a change will be implemented (Business/Accenture/etc.)?
  + This will be communicated to the SCCM Global Administrators prior to implementation
* Is the appropriate communications planned after a change is completed (Business/Accenture/etc.)?
  + The change will be announced at the SCCM Community Meeting
* Does this change have a GxP impact and if yes is Quality aware of the change?
  + There is no expected GxP impact with this change but SCCM clients that were previously unmanaged due to the missing data will become available for deployments and reporting after the data is corrected. These clients, which might be GxP regulated, may receive previously deployed software or software updates that they should have received in the past
* What are the dependencies for this change?
  + Access to read Active Directory, Access to the SCCM\_P00 and SCCM\_EXT databases. Access to the custom tables in the SCCM\_EXT database used for domain identification and change logging
* Can the change lead to possible collisions?
  + We do not know of any other changes that this will interfere with
* Does the change have transversal impact?
  + No transversal impact has been identified.
* Has the change been successfully tested in a DEV/Test environment
  + The change has been developed and tested in the SCCM 2012 PRE2PROD. A peer reviewed execution of this change was conducted in the SCCM 2012 PREPROD environment

## Test Plan

See the Test Case Document located here

[http://wssamer.sanofi.com/ws/AutomationCenterProvTools/Documents/Change%20Requests/Extended%20System%20Discovery%20V2%20Sept%202016/TEST%20CASE%20-%20Extended%20System%20Discovery.docx](http://wssamer.sanofi.com/ws/AutomationCenterProvTools/Documents/Change%20Requests/_ARCHIVE/Extended%20System%20Discovery%20V3%20Oct%202016/TEST%20CASE%20-%20Extended%20System%20Discovery.docx)

## Communication Plan

Notify the SCCM Global Administrators of the intended change and its execution. Notify the general SCCM community at the next SCCM Community Meeting.

SCCM Administrators will be given a link to the reports that show both what systems were fixed and what systems are currently missing their distinguished names. Regional and Site admins should periodically review the report of systems currently missing their distinguished names to determine if these systems are inactive and can be removed from SCCM. An SCCM Technical Blog will be made available to explain the need for this periodic review.

## Detailed Implementation (Installation) Plan

### Disable the scheduled task which invokes V1 of this script for the environment being implemented

On XSPW10X060S open Scheduled Tasks and disable the task named “ExtendedSystemDiscovery”

### Modify Two Custom SQL Tables ( Done only during DEV Install )

1. Open the SQL Server Management Studio for SCCM CAS where this is being implemented.
2. From the EXT database, add the following columns to the custom table named tbl\_ExtDiscLogging  
   (Expand table, Right click the Columns Node, choose New )
   * SMSClientGUID varchar(64)
   * DiscoveryMethod varchar(32)

### Verify the ExtendedSystemDiscovery folder is populated ( Done only during DEV Install )

1. On RESSWCMSTMP02 create the folder below if it does not exist   
   D:\PowerShell\_Tasks\ExtendedSystemDiscovery
2. Copy all the files from RESSWCMSTMP02 D:\CodeLibrary\ProductionCopies-ReadOnly\ExtendedSystemDiscovery to D:\PowerShell\_Tasks\ExtendedSystemDiscovery

### Set up the Scheduled Task to Invoke the Extended System Discovery script daily at 9PM

1. On RESSWCMSTMP02, create a new basic Scheduled Task and configure its properties

|  |
| --- |
| General tab : Named according to the Task Name in the environment table below |
| General tab : Runs whether or not a user is logged on is enabled |
| General tab : Runs with Highest Privileges is enabled |
| General tab : Run Using Account according to the table below |
| General tab : Configured for Windows Vista / Windows Server 2008 mode |
| Triggers: Runs Daily, |
| Triggers: Start time is set according to the environment table below |
| Triggers: Stop if it runs longer than 4 hours |
| Action: Program value is PowerShell.exe |
| Action: Arguments value is set according to the arguments table |
| Action: Start In value is D:\PowerShell\_Tasks\ExtendedSystemDiscovery |

**Task Properties to be used for the Scheduled Tasks**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Environment** | **Site Server** | **Site Code** | **Service Account** | **Task Name** | **Start Time** |
| PRE2PROD | XSNW10S629K | F01 | svc\_SCRB\_DEV | Extended System Discovery - PRE2PROD | 3PM |
| DEV | GISSSCCMDEV2 | T00 | svc\_SCRB\_DEV | Extended System Discovery - DEV | 6PM |
| PREPROD | XSNW10W142C | PP0 | svc\_SCRB\_TEST | Extended System Discovery - PREPROD | 9PM |
| PROD | XSPW10W200P | P00 | svc\_SCRB\_PROD | Extended System Discovery - PROD | 3AM |

**Arguments are defined by the environments values from the table above**

|  |  |
| --- | --- |
| **Environment** | **Action Arguments** |
| PRE2PROD | "D:\PowerShell\_Tasks\ExtendedSystemDiscovery\ExtendedSystemDiscovery.ps1" -SiteServer " XSNW10S629K " -SiteCode "F01"  -InstanceName "ExtendedSystemDiscovery-PRE2PROD" |
| DEV | "D:\PowerShell\_Tasks\ExtendedSystemDiscovery\ExtendedSystemDiscovery.ps1" -SiteServer " GISSSCCMDEV2 " -SiteCode "T00"  -InstanceName "ExtendedSystemDiscovery-DEV" |
| PREPROD | "D:\PowerShell\_Tasks\ExtendedSystemDiscovery\ExtendedSystemDiscovery.ps1" -SiteServer " XSNW10W142C " -SiteCode "PP0"  -InstanceName "ExtendedSystemDiscovery-PREPROD" |
| PROD | "D:\PowerShell\_Tasks\ExtendedSystemDiscovery\ExtendedSystemDiscovery.ps1" -SiteServer " XSPW10W200P " -SiteCode "P00"  -InstanceName "ExtendedSystemDiscovery-PROD" |

## Back Out Plan

1. Stop the scheduled task from automatic execution on RESSWCMSTMP02.
2. Optional : Re-enable the scheduled task for V1 of this script on server XSPW10X060S
3. Optional : Review the SCCM\_EXT SQL table named tbl\_ExtDiscLogging to manually identify and correct any problem data that got changed in the production SCCM\_DISC table