Intel® Setup and Configuration Service

(Intel® SCS)

Standalone System Discovery Utility

Document Release Date: June 23, 2011

Table of Contents

1 Introduction

This document describes how to use the standalone System Discovery utility.

System Discovery lets you get data about Intel® Active Management Technology (Intel® AMT) from systems in your network. This data can help organizations to decide how to configure and use Intel AMT in their network.

The standalone System Discovery utility does exactly the same as the "SystemDiscovery" command included in the Configurator component of Intel SCS.

2 About System Discovery

The System Discovery utility is a Command Line Interface (CLI) that gets data from the Intel AMT device and the host platform of the system.

The data is saved in an XML file and/or in the registry of the system. The data can then be collected using third-party hardware and software inventory applications.

The data is saved in the registry of each system at:

- 32-bit and 64-bit operating systems:
  HKLM\SOFTWARE\Intel\SCS7.0\System_Discovery
- In addition, on 64-bit operating systems:
  HKLM\SOFTWARE\Wow6432Node\Intel\SCS7.0\System_Discovery

For information about the data format, see "System Discovery Data Format" on page 4.

For information about how to collect this data from the systems, refer to the documentation of your hardware/software inventory application.

Note: Data is collected from all systems, even systems without Intel AMT. System Discovery tries to get the data about Intel AMT using the Intel Manageability Engine Interface (MEI) driver. If the MEI driver is not installed and enabled, the data about Intel AMT is taken from the BIOS. If the manufacturer has not installed the correct BIOS in the platform, this can cause incorrect values in the data collected about Intel AMT.

---

3 Using the System Discovery Utility

You can run the System Discovery utility (*SCSDiscovery.exe*) manually from a command line prompt. For a larger number of systems, you can include the utility in a deployment package and send it to all the systems in your network.

Note: The *xerces-c_2_7.dll* file must always be located in the same folder as the *SCSDiscovery.exe* file.

3.1 Required Permissions

The local user account running the System Discovery utility must have administrator permissions on the system. On operating systems with User Account Control (UAC), the Configurator must be “Run as administrator”.

3.2 Syntax Conventions

The System Discovery utility CLI is not case-sensitive.

To view the syntax help, type *SCSDiscovery* /? and press <Enter>.

These conventions are used in the command syntax help:

- Optional parameters are enclosed in square brackets [ ]
- User defined variables are enclosed in angled brackets < >
- Mutually exclusive parameters are separated with a pipe |
- Where necessary, braces { } are used to group elements together to eliminate ambiguity in the syntax.

3.3 Global Options

You can use any of these global options with the System Discovery utility:

- /Verbose — Creates a detailed log
- /KeepLogFile — Appends the current log to the existing log file
- /Output {Console | File <*filename*> | Silent} — Defines the output parameters:
  - Console — Diverts logging messages to the console screen
  - File <*filename*> — Logs messages to an output file (default option)
  - Silent — Creates no output (console or file)

3.4 Log Files

Each action that the System Discovery utility performs, and any errors that occur, are saved in two locations:

- In the Windows Event Viewer Application log of the Intel AMT system.
- In a log file. If you do not make changes using the global options, this is the default:
  - A new log file is created each time you run the System Discovery utility. You can use the /KeepLogFile global option to change this default.
  - The log file is saved in the folder where the System Discovery utility is located, and has this format:
    SCSDiscoverylog_HostName_YYYY-MM-DD-HH-MI-SS.Log
    (for example: *SCSDiscoverylog_ComputerX_2010-05-01-11-05-57.log*).
    You can use the /Output global option to change this default.

3.5 Syntax and Parameters

Syntax	SCSDiscovery.exe [global options] SystemDiscovery [<*filename*>] [/NoFile] [/NoRegistry]
Parameters	
[global options]	See "Global Options" on page 2
<*filename*>	The name of the XML file and the path to the location where you want to save it. By default, the name of the XML file is the FQDN of the system and it is saved in the same folder as the System Discovery utility.
/NoFile	Do not save data in an XML file. If you use this parameter, do not use the <*filename*> parameter
/NoRegistry	Do not save data in the registry of the system

4 System Discovery Data Format

The names of the XML tags and the registry keys are identical. All tags/keys are saved, even if the specific data cannot be retrieved:

- In the XML file – Saved in empty tags. For example: <WirelessLinkStatus/>
- In the registry – Saved in a Binary key with a zero-length binary value

For more information about the data, see:

- "Data about Intel AMT" on page 4
- "Data about the Host Network Configuration" on page 9
- "Other Data" on page 11

4.1 Data about Intel AMT

Table 1. Data about Intel AMT

Registry Key/XML Tag	Key Type	Max Size	Description
AMTConfigurationMode	String	32	The current configuration mode of the Intel AMT device: • SMB Mode • Enterprise Mode • None
AMTConfigurationState	String	32	The TLS-PSK option that will be used during the next remote configuration of the Intel AMT device: • PKI – At least one of the Root Certificate Hashes embedded in the Intel AMT firmware that can be used for Remote Configuration (PKI) is defined as "active" • PSK – A Pre-Shared Key (PSK) has been put in the Intel AMT device • Not Ready – The system is not ready for remote configuration
AMTControlMode	String	64	The current Control Mode of the Intel AMT device: • Client Control Mode • Admin Control Mode • None
AMTFQDN	String	256	The FQDN defined in the MEBx of the Intel AMT device

Table 1. Data about Intel AMT (Continued)

Registry Key/XML Tag	Key Type	Max Size	Description
AMTSKU	String	32	The Stock Keeping Unit (SKU): • Full AMT Manageability • Standard Manageability • Level III Manageability
AMTState	String	64	The current state of the Intel AMT device: • Post Provisioning – Intel AMT is configured • In Provisioning – The interfaces are open and Intel AMT is ready for configuration to start • Pre Provisioning – Intel AMT is not configured and the interfaces are closed
AMTversion	String	32	The Intel AMT version
CertificateHashes	String	2048	The thumbprints of the Root Certificate Hashes embedded in the Intel AMT firmware that can be used for Remote Configuration (PKI). This key/tag is a string of thumbprints, each separated by a semi-colon (;). Each of the thumbprint values is separated by a space. **Format:** CA Name, hash in hexadecimal (base16) format, enabled|disabled{, default}; **Example:** VeriSign Class 3 Primary CA-G1, 742c3192e607e424eb4549542be1bbc53e6174e2, Enabled, Default; **Note:** If the hash is not defined as default, the "default" value is not included.
FWVersion	String	32	The version of Firmware in the Intel AMT device
IsAMTConfigured	Binary	1	True if Intel AMT is configured
IsAMTEACEnabled	Binary	1	True if End-Point Access Control (EAC) is enabled in Intel AMT
IsAMTEnabledInBIOS	Binary	1	True if Intel AMT is enabled in the MEBx of the Intel AMT device
IsAMTFWUpdateEnabled	Binary	1	True if the Intel AMT Firmware can be updated remotely
IsAMTIDEREnabled	Binary	1	True if the IDE Redirection (IDE-R) interface is enabled in Intel AMT
IsAMTKVMEnabled	Binary	1	True if the Keyboard Video Mouse (KVM) redirection interface is enabled in Intel AMT

Table 1. Data about Intel AMT (Continued)

Registry Key/XML Tag	Key Type	Max Size	Description
IsAMTKVMSupported	Binary	1	True if the KVM redirection interface is supported in the Intel AMT firmware
IsAMTSharedFQDNEnabled	Binary	1	True if the Shared FQDN feature is enabled (Intel AMT 6.x and higher)
IsAMTSOLEnabled	Binary	1	True if the Serial over LAN (SOL) interface is enabled in Intel AMT
IsAMTSupported	Binary	1	True if Intel AMT is supported
IsAMTWebUIEnabled	Binary	1	True if the WebUI interface is enabled in Intel AMT
IsAntiTheftSupported	Binary	1	True if the Intel® Anti-Theft feature is supported in the Manageability Engine
IsCCMSupported	Binary	1	True if the system supports Client Control Mode. **Note:** This value will also be false on Intel AMT 6.2 and higher devices if Client Control Mode has been disabled.
IsCILASupported	Binary	1	True if the Client Initiated Local Access (CILA) feature is supported. CILA enables a user connected to the internal corporate network to send a support request to the IT administrator.
IsHBPSupported	Binary	1	True if the system supports host-based configuration. **Note:** The value of this tag might also be False if the Configurator could not determine if the device supports host-based configuration. This can occur if the Local Manageability Service (LMS) is not running.
IsHWCryptoEnabled	Binary	1	True if the system supports hardware cryptography. If this value is false, the system also does not support Transport Layer Security.
IsIDEREnabledInBIOS	Binary	1	True if IDE-R is enabled in the MEBx of the Intel AMT device
IsIDERSupportedInBIOS	Binary	1	True if the BIOS of the platform supports IDE Redirection
IsKVMEnabledInBIOS	Binary	1	True if KVM redirection is enabled in the MEBx of the Intel AMT device
IsKVMSupportedInBIOS	Binary	1	True if the BIOS of the platform supports KVM redirection
IsMEIEnabled	Binary	1	True if the Intel® MEI driver is installed and working

Table 1. Data about Intel AMT (Continued)

Registry Key/XML Tag	Key Type	Max Size	Description
IsNetworkInterfaceEnabled	Binary	1	True if the network interface of the Intel AMT device is enabled
IsSOLEnabledInBIOS	Binary	1	True if SOL redirection is enabled in the MEBx of the Intel AMT device
IsSOLSupportedInBIOS	Binary	1	True if the BIOS of the platform supports SOL redirection
IsTLSEnabled	Binary	1	True if Transport Layer Security (TLS) is enabled in Intel AMT
IsTLSSupported	Binary	1	True if TLS is supported on the platform
IsZTCEnabled	Binary	1	True if remote configuration (PKI) is enabled in the MEBx of the Intel AMT device. Remote configuration is also known as Zero Touch Configuration (ZTC).
MEIVersion	String	32	The version of the Intel® MEI driver. This driver is also known as the HECI driver.
MEPlatformSKUs	String	64	The type (SKU) of Intel Manageability Engine: • Consumer | Corporate • Desktop | Mobile • Work Station | Server | Super SKU This key/tag is a string of three values, each separated by a semi-colon (;) and a space. **Example:** Consumer; Desktop; Mobile
PskPID	String	16	The Provisioning ID (PID) of the TLS-PSK pair that was installed in the MEBx of the Intel AMT device
UUID	String	64	The Universally Unique Identifier (UUID) of the Intel AMT device
WiredIPv4DHCPEnabled	Binary	1	True if DHCP is enabled for the IPv4 address of the wired LAN interface in the Intel AMT device

Table 1. Data about Intel AMT (Continued)

Registry Key/XML Tag	Key Type	Max Size	Description
WiredIPv4IP	String	16	The IPv4 address of the wired LAN interface in the Intel AMT device. **Note:** • A value of "0.0.0.0" means that Intel AMT has not updated the IP address from the DHCP server. • In Intel AMT versions from 2.x to 3.x, access to this data is blocked if the Local Manageability Service (LMS) is running. If the LMS is stopped before running System Discovery, this data can be collected. The LMS can be stopped and started using Microsoft CLI commands. These commands can be included in a script/batch file sent in the deployment package (and run with local administrator permissions on the computer system). For example: 1.Stop the LMS using this command: SC Stop LMS. 2. Run System Discovery 3. Start the LMS using this command: SC Start LMS.
WiredLinkStatus	String	16	The link status of the wired LAN interface in the Intel AMT device: • Down • Up
WiredMACAddress	String	32	The MAC address of the wired LAN interface in the Intel AMT device
WirelessIPv4IP	String	16	The IPv4 address of the wireless LAN interface in the Intel AMT device
WirelessLinkStatus	String	16	The link status of the wireless LAN interface in the Intel AMT device: • Down • Up
WirelessMACAddress	String	32	The MAC address of the wireless LAN interface in the Intel AMT device

4.2 Data about the Host Network Configuration

The table below describes all the data that the System Discovery gets that is related to the network configuration of the host platform.

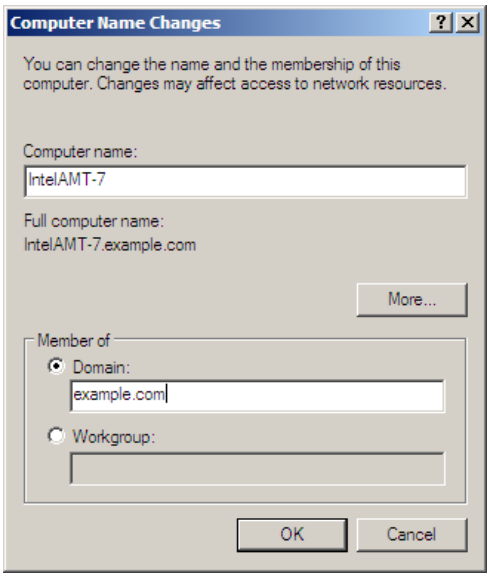
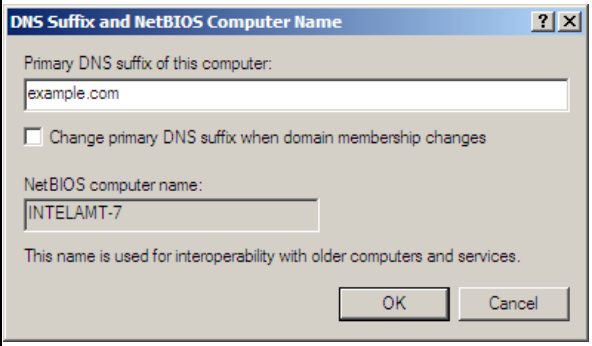
This example output shows how some of that data is shown by the “ipconfig /all” command run on the system:

```
>ipconfig /all

Windows IP Configuration

   Host Name . . . . . . . . . . . .: IntelAMT-7      -> OSDNSHostName
   Primary Dns Suffix. . . . . . . .: example.com     -> OSPrimaryDNSSuffix
   Node Type . . . . . . . . . . . .: Hybrid
   IP Routing Enabled . . . . . . . : No
   WINS Proxy Enabled . . . . . . . : No
   DNS Suffix Search List . . . . . : example.com
                                      Vprodemo.com

Ethernet adapter Local Area Connection 2: (The onboard wired LAN interface)

   Connection-specific DNS Suffix . . . : vprodemo.com    -> OSSpecificDNSSuffix
   Description . . . . . . . . . . . . .: Intel(R) 82578DM Gigabit Network Connection
   Physical Address . . . . . . . . . . : 88-88-88-88-87-88
   Dhcp Enabled . . . . . . . . . . . . : Yes             -> OSDHCPEnabled
   Autoconfiguration enabled . . . . . .: Yes
   IP Address . . . . . . . . . . . . . : 192.168.1.11    -> OSIP
   Subnet Mask . . . . . . . . . . . . .: 255.255.255.0  -> OSSubnet
   Default Gateway . . . . . . . . . . .: 192.168.1.1     -> OSGateway
   DHCP Server . . . . . . . . . . . . .: 192.168.1.8     -> OSDHCP
   DNS Servers . . . . . . . . . . . . .: 192.168.1.8     -> OSDNS
   Primary WINS Server. . . . . . . . . : 192.168.1.8
```

Table 2. Data about the host network configuration

Registry Key/XML Tag	Key Type	Max Size	Description
OSDHCP	String	16	The IP address of the DHCP Server for the onboard wired LAN interface
OSDHCPEnabled	Binary	1	True if DHCP is enabled for the onboard wired LAN interface
OSDNS	String	256	The IP addresses of the Domain Name Servers for the onboard wired LAN interface
OSDNSHostName	String	64	The hostname of the computer used by the Domain Name System (DNS)
OSDNSLookupName	String	256	Contains the FQDN returned by an “nslookup” on the IP address of the onboard wired LAN interface. If the DNS is not configured correctly with Reverse Lookup Zones, the “nslookup” will fail and this key/tag will be empty.

Table 2. Data about the host network configuration (Continued)

Registry Key/XML Tag	Key Type	Max Size	Description
OSDomainName	String	256	The domain defined in the host operating system (usually the “Domain” field in the System Properties > Computer Name tab)
OSGateway	String	256	The IP address of the gateway of the onboard wired LAN interface
OSHostName	String	64	The hostname defined in the operating system (usually in the “Computer name” field in the System Properties > Computer Name tab). In most conditions, this value is the same as OSDNSHostname. 
OSIP	String	16	The IP address of the onboard wired LAN interface
OSPrimaryDNSSuffix	String	256	The Primary DNS Suffix defined in the host operating system 
OSSpecificDNSSuffix	String	256	The “Connection-specific DNS Suffix” of the onboard wired LAN interface
OSSubnet	String	16	The Subnet Mask of the onboard wired LAN interface

4.3 Other Data

Table 3. Other Data

Registry Key/XML Tag	Key Type	Max Size	Description
BIOSVersion	String	32	The BIOS version of the host platform
Chassis	String	256	The type of chassis (for example: mobile \ desktop \ tower)
LastTimeUpdated	String	32	The date and time when the System Discovery was run. • Format: YYYY-MM-DD HH:MM:SS • Example: 2010-10-12 11:10:14 **Note:** Each time that System Discovery runs, existing data in the "System_Discovery" registry key is deleted. Existing XML files with the same name are overwritten.
LMSVersion	String	32	The version of the Local Manageability Service (LMS) installed on the system (as recorded in the registry). The LMS is a service that runs locally in an Intel AMT device and enables local applications to send requests and receive responses to and from the device. The LMS listens for and intercepts requests directed to the Intel AMT local host and routes them to the Management Engine via the Intel Management Engine Interface driver.
Manufacturer	String	256	The manufacturer of the system
Model	String	256	The model of the system
OperatingSystem	String	256	The operating system
PingConfigurationServer	Binary	1	True if a ping was successfully sent to the configuration server defined in the MEBx of the Intel AMT device
SerialNumber	String	256	The serial number of the system
SMBIOSAssetTagData	String	256	Asset Tag Data (entered by the manufacturer)
UNSVersion	String	32	The version of the User Notification Service (UNS) installed on the system (as recorded in the registry). The UNS is a service that periodically requests the NAC posture from the Intel AMT device and saves it in the registry.