



# SNMP HOWTO

---

**Build 2.2.0.32**

**2020-01-07**

This is the official HOWTO on using SAMLite to update Other Assets using SNMP

## Table of Contents

Introduction .....	3
SNMP Configuration .....	4
SNMP configuration for an Asset.....	4
Installation .....	5
Scan Agents.....	5
Manage Scan Agents.....	5
Download Scan Agents .....	7
Example Screenshots .....	8

## Introduction

SNMP (Simple Network Management Protocol) is a computer network protocol that's supported by many devices to allow you to monitor and/or control them.

SAMLite currently only supports the monitoring of existing assets via SNMP. Auto-discovery is not supported. The assets have to already be added to SAMLite either manually one by one or bulk imported using the CI import wizard.


For example, you may have printers already added as Other Assets to SAMLite and you would now like to monitor their page counts and toner status/levels. First you will need to find out if the printers support SNMP and what the relevant SNMP OIDs (object identifiers) are for page counts and toner levels. To do so you may have to refer to the printer manufacturer and/or their website/documentation. SNMP OIDs are usually in a format similar to 1.3.6.1.x.x.x.x (where x are numbers).

Once you have confirmed SNMP support and what SNMP OIDs to use and enabled SNMP support on those printers (if not enabled by default), you can then login to SAMLite and add/set the required attribute (Management IP) and desired attributes (page counts, toner levels) for the printers using the SNMP Configuration section.

After that Scan Agents need to be installed on machines that can talk to those printers using SNMP.

## SNMP Configuration

### SNMP configuration for an Asset

Login and go to Other Assets and pick a Configuration Item that you wish to perform SNMP Scanning on. Next click on  [SNMP Configuration](#). Then you should see the following configuration panel.

SNMP Configuration		
Name	Value	Comment (Edit)
The IP Address Attribute must be specified for SNMP queries to be enabled. Scan Agents need to be installed to perform the SNMP queries.		
IP Address Attribute	<input type="text" value="Management IP"/>	Attribute storing the IP Address for SNMP queries
Default Error Delay	<input type="text"/>	The default number of seconds to wait before retrying an asset after errors. 300 if blank.
Default PreDelay	<input type="text"/>	The default number of milliseconds to wait before SNMP queries. 1000 if blank.
Default Retries	<input type="text"/>	The default maximum number of SNMP query retries. 3 if blank.
Default Retry Delay	<input type="text"/>	The default number of seconds to wait before SNMP query retries. 60 if blank.
Default SNMP Community String	<input type="text"/>	public will be used if blank
Default SNMP Version	<input type="text"/>	1 will be used if blank
SNMP Community String Attribute	<input type="text"/>	Attribute storing the SNMP Community string to use

To enable SNMP querying of assets by the Scan Agents the *IP Address Attribute* **MUST** be configured and specified. For example if the attribute that contains the IP address for each Printer is called “Management IP” then enter Management IP as the value for IP Address Attribute.

Attribute Configuration			
Attribute Name	Default OID	OID Attribute	Comment (Edit)
If OID Attribute is not specified or its value for the asset is blank, Default OID will be used.			
Management IP	<input type="text"/>	<input type="text"/>	
Manufacturer	<input type="text"/>	<input type="text"/>	
Model	<input type="text" value="1.3.6.1.2.1.1.1.0"/>	<input type="text"/>	
OID-PageCount A4 Black	<input type="text"/>	<input type="text"/>	
OID-PageCount A4 Color	<input type="text"/>	<input type="text"/>	
PageCount A4 Black	<input type="text" value="1.3.6.1.4.1.1602.1.11.1.3.1.4.108"/>	<input type="text" value="OID-PageCount A4 Black"/>	
PageCount A4 Color	<input type="text" value="1.3.6.1.4.1.1602.1.11.1.3.1.4.123"/>	<input type="text" value="OID-PageCount A4 Color"/>	
Purchase Date	<input type="text"/>	<input type="text"/>	
Serial Number	<input type="text"/>	<input type="text"/>	
Toner Black	<input type="text" value="1.3.6.1.2.1.43.11.1.1.9.1.1"/>	<input type="text"/>	
Toner Cyan	<input type="text" value="1.3.6.1.2.1.43.11.1.1.9.1.2"/>	<input type="text"/>	
Toner Magenta	<input type="text" value="1.3.6.1.2.1.43.11.1.1.9.1.3"/>	<input type="text"/>	
Toner Yellow	<input type="text" value="1.3.6.1.2.1.43.11.1.1.9.1.4"/>	<input type="text"/>	
Uptime	<input type="text" value="1.3.6.1.2.1.1.3.0"/>	<input type="text"/>	

Next specify the *Default OIDs* for each Attribute to be updated via SNMP.

You can also specify an *OID Attribute* which stores the alternative OID to use if a different OID is to be used for that asset. This can be necessary if the asset is a different model or type.

Currently SNMP queries are only done once a day for each query-able attribute.

## Installation

### Scan Agents

The Scan Agents do the actual SNMP queries on the assets. You will need to install a Scan Agent on a PC that has SNMP network access to the assets to be scanned.

A Scan Agent can also be used to scan the machine it is installed on- this is called a Local Scan. The scan results are similar to those from a normal SAMLite Agent.

### Manage Scan Agents

First go to Administration, Scan Agents and Manage Scan Agents to configure the Scan Agent Settings.

### Scan Agent Settings

Scan Agent Settings		
Name	Value	Comment
Updater path	../WebService/Updates/ScanAgentUpdater.msi	Where the agent updater is in the server file system
Updater URL	<input type="text" value="http://TheSAMLiteServer/SAMLiteWebService/Updates/ScanAgentUpdater.msi"/>	The URL to use to download the agent updater
Updater Version	0.0.0.30	The version of the current updater
Updater Size	6,763,520 bytes	The size in bytes of the current updater
Updater SHA256	d9e3163412135e0f58751e32c80fa8bed2b28b842d515a3448a652d1017744ab	The SHA256 sum of the current updater
AgentTemplate path	../ScanAgentPacker/AgentTemplate.7z	Where the AgentTemplate is. The AgentTemplate is used to build the updater and installer.
AgentTemplate Version	0.0.0.30	The version of the current AgentTemplate
AgentTemplate Size	4,289,260 bytes	The size in bytes of the current AgentTemplate
AgentTemplate SHA256	1420b8c2b1ace2a3f2ab292416a992cfcfb407bc36972b2f9ee3188d99c915b	The SHA256 sum of the current AgentTemplate
Upload AgentTemplate	<input type="button" value="Choose file"/> No file chosen <input type="button" value="Upload AgentTemplate"/> <input type="button" value="Build Updater"/>	
Polling interval:	<input type="text" value="240"/>	The minimum number of minutes the agent will wait between contacting the agent handler. Must be more than 30.
Handler URLs:	<input type="text"/>	A list of URLs the Scan Agent will use to get requests and submit results. One URL per line.

Set suitable Updater and Handler URLs for your environment. Example Updater URL:

`http://TheSAMLiteServer/SAMLiteWebService/Updates/ScanAgentUpdater.msi`

Example Handler URLs: `http://TheSAMLiteServer/SAMLiteWebService/Handler.ashx`

Replace TheSAMLiteServer with the IP address or hostname of your SAMLite server.

AgentTemplate files are used to build the Scan Agent updater and installer. If newer Scan Agents are released, updated AgentTemplate files will be made available to eligible customers (e.g. valid maintenance or subscription).

**Local Scan Schedule**

Enabled:  If enabled the ScanAgent will do an inventory scan of the local machine

Scheduled Times:  Note: scheduled times will be constrained to polling interval

Scheduled Days:

Daily

On:

Day(s) of month:  (1,15 = 1st and 15th of month. Must be blank to enable Day of Week scheduling)

Day of Week:

Sunday  Monday  Tuesday  Wednesday  Thursday  Friday  Saturday

x<sup>th</sup> Day of Week of the month: (If Tuesday, 1st and 3rd selected = first and third Tuesdays of the month)

1st  2nd  3rd  4th  5th

Months:

January  February  March

April  May  June

July  August  September

October  November  December

You can configure the Local Scan Schedule in this section. If enabled, a Local Scan is done when the Scan Agent contacts the server and the scheduled time has passed AND the scheduled time is later than the time the last scan was done. If no scheduled times are specified the Scan Agent will do a scan once a day. The polling interval is how often the Scan Agent contacts the SAMLite cloud server. The default polling interval is 240 minutes.

Click the Save button to save the settings.

### Scan Agent List

Scan Agent List								
ID	Name	Serial Number	Version	Remote Address	IPv4	IPv6	Last Discovered Date	First Discovered Date
2	jsicentral-svc	8782-8147-0843-6174-3787-8046-74	0.0.0.28	10.243.1.171	10.243.1.171		3/12/2019 4:10:19 PM	26/11/2019 6:26:58 PM
3	winxprojsi	8439-7187-0078-7411-8153-0243-12	0.0.0.28	10.222.1.11	10.222.1.11		3/12/2019 4:12:28 PM	28/11/2019 5:37:47 PM

This shows the known Scan Agents and some information.

## Scan Agent Tasks

Scan Agent Tasks							
Only up to 500 most recent tasks shown				Invert search: <input type="checkbox"/>		Search: <input type="text" value="lab"/>	
TaskStart	TaskEnd	SessionID	AgentID	AgentName	AgentCommand	TaskStatus	AgentResponse
2019-12-03 15:12:26.367	2019-12-03 15:12:27.943	109	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: Uptime: 1.3.6.1.2.1.1.3.0	OK	21 days, 01:30:39.24
2019-12-03 15:12:24.733	2019-12-03 15:12:26.223	108	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: Toner Yellow: 1.3.6.1.2.1.43.11.1.1.9.1.4	OK	6840
2019-12-03 15:12:23.033	2019-12-03 15:12:24.617	107	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: Toner Magenta: 1.3.6.1.2.1.43.11.1.1.9.1.3	OK	6912
2019-12-03 15:12:21.473	2019-12-03 15:12:22.927	106	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: Toner Cyan: 1.3.6.1.2.1.43.11.1.1.9.1.2	OK	6768
2019-12-03 15:12:19.880	2019-12-03 15:12:21.347	105	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: Toner Black: 1.3.6.1.2.1.43.11.1.1.9.1.1	OK	7896
2019-12-03 15:12:13.180	2019-12-03 15:12:19.773	104	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: Model: 1.3.6.1.2.1.1.1.0	OK	Canon iR-ADV C5051 /P
2019-12-03 14:14:26.360	2019-12-03 14:14:27.810	97	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: PageCount A4 Color: 1.3.6.1.4.1.1602.1.11.1.3.1.4.123	OK	279281
2019-12-03 14:14:24.803	2019-12-03 14:14:26.253	96	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: PageCount A4 Black: 1.3.6.1.4.1.1602.1.11.1.3.1.4.108	OK	506253
2019-12-02 14:13:17.993	2019-12-02 14:13:19.380	88	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: PageCount A4 Color: 1.3.6.1.4.1.1602.1.11.1.3.1.4.123	OK	279261
2019-12-02 14:13:16.373	2019-12-02 14:13:17.900	87	3	winxprojsi	snmpget: Printers: ISA Lab Canon-1: 192.168.1.36: PageCount A4 Black: 1.3.6.1.4.1.1602.1.11.1.3.1.4.108	OK	506195

This is a list of recent Agent tasks. This can be used for troubleshooting Scan Agent and SNMP query issues.

## Download Scan Agents

To download the Scan Agent go to Administration, Scan Agents and Download Scan Agents

### Download Scan Agents

Scan Agents can perform SNMP queries and also locally scan the machines they are installed on.

Platform	Action	Download	Version	Size	SHA256	Interval	Handler URLs
Windows	<a href="#">Rebuild</a>	<a href="#">ScanAgent.msi</a>	0.0.0.30	6,763,520 bytes	a5cd388e0a5d497acad6e00d3a24f703856814d36f9de250dccc2aff8dee5ee6	60	<a href="http://10.243.1.171/SAMLiteWebService/Handler.ashx">http://10.243.1.171/SAMLiteWebService/Handler.ashx</a> <a href="http://10.243.1.172/SAMLiteWebService/Handler.ashx">http://10.243.1.172/SAMLiteWebService/Handler.ashx</a>

On this page you can build and download the Scan Agent installer. A Handler URL *must* be configured before you can download the Scan Agent installer.

Click on the Build/Rebuild button to build the installer. Click on the file name to download the installer.

If a new version of the agent is available the build button may show a different version number from the version available to be downloaded. You can either download the existing version or click on the Build button to replace the existing version with a new build.

The SHA256 text is the hash that uniquely identifies the installer file. This hash can change after a rebuild even for the same version.

## Example Screenshots

Following are some screenshots

CI > Printers

Assets of Printers

3 records 🔍

Name	Uptime	Description	Management IP	PageCount A4 Black	PageCount A4 Color	Toner Black	Toner Cyan	Toner Magenta	Toner Yellow	DateLastModified	DateCreated
ISA Lab Canon-1	26 days, 04:31:51.81	Canon iR-ADV C5051 /P	192.168.1.36	506326	279285	7896	6768	6912	6840	6/12/2019 4:23:26 PM	6/12/2019 4:23:14 PM
ISA Pantv Canon-1	2 days, 04:04:22.30	Canon iR-ADV C5250 /P	192.168.1.34	63873	11915	56	70	68	68	6/12/2019 4:22:58 PM	6/12/2019 4:22:34 PM

CI > Printers > ISA Lab Canon-1

Details of ISA Lab Canon-1

Attribute Name	Attribute Value	Last Scan Start	Status	Last Scan Message
Name	ISA Lab Canon-1	--	--	--
Manufacturer	Canon	--	--	--
Model	iR-ADV C5051	--	--	--
Purchase Date		--	--	--
DPI	600x600	--	--	--
Serial Number		--	--	--
Maximum paper size	A3	--	--	--
ppm	45	--	--	--
Management IP	192.168.1.36	--	--	--
Description	Canon iR-ADV C5051 /P	2019-12-08 18:13:37	OK	
PageCount A4 Black	506326	2019-12-08 18:13:38	OK	
PageCount A4 Color	279285	2019-12-08 18:13:39	OK	
Toner Black	7896	2019-12-08 18:13:40	OK	
Toner Cyan	6768	2019-12-08 18:13:41	OK	
Toner Magenta	6912	2019-12-08 18:13:43	OK	
Toner Yellow	6840	2019-12-08 18:13:44	OK	
OID-PageCount A4 Black		--		Agent: winxprojsi Serial No: 8439-7187-0078-7411-8153-0243-12 Agent Version: 0.0.0.28 Remote Address: 211.24.111.74 IPv4: 10.222.1.11 IPv6: Scan End: 2019-12-08 18:13:44
OID-PageCount A4 Color		--		
Uptime	26 days, 04:31:51.81	2019-12-08 18:13:45	OK	
Date Created	6/12/2019 4:23:14 PM			

Historical Changes of ISA Lab Canon-1

You are currently filtering by search

3 records 🔍

Name	Department	Location	Attribute	Previous Value	Current Value	Change Date	Component	User ID	User Name
ISA Lab Canon-1	Unassigned	Unassigned	PageCount A4 Black	506318	506326	7/12/2019 6:13:39 PM	4 Printers		
ISA Lab Canon-1	Unassigned	Unassigned	PageCount A4 Color		279285	6/12/2019 4:40:13 PM	4 Printers		
ISA Lab Canon-1	Unassigned	Unassigned	PageCount A4 Black		506318	6/12/2019 4:40:12 PM	4 Printers		