

Discovery and Usage data for Software License Management

Is Microsoft SCCM the best solution?

Many organizations use Microsoft's SCCM product as their primary software discovery method. Because SCCM is already used by operations, it comes at little or no additional cost to the Software License Management (SLM) group. But is it a wise decision for software licensing to use SCCM data as the primary data source? We suggest that this decision should be reconsidered because of the extra costs and missed savings opportunities that come with using SCCM for discovery and usage.

Typical scenario

You may recognize this scenario in your organization. A business line manager needs an instance of SQL Server or Oracle stood up immediately. The operations people are happy to comply, but say that they first need to get the software licensing group involved and that may take a month. The business line manager says to stand up the server now and he will inform SLM and take the flack. Sometime later in the year an audit and true up is done and surprise, there are additional VMs with SQL Server or Oracle Enterprise Editions in use, and the organization now owes the vendor a lot more money.

Sound familiar? Software licensing was using SCCM data, which was out of date and never picked up those new VMs. In fact, if it was an Oracle database, SCCM never discovered it at all. Similar scenarios can occur within engineering and production groups, when they need to add new CAD tools or new features onto their existing software.

What can be done to avoid these scenarios? SLM needs a discovery system that automatically discovers all new and existing VM guests and hosts; new instances of software on the VMs; and the associated CPU types and cores on those VMs. The discovery system also needs to run on a continual basis, not just once every few months. In addition, software licensing should have immediate access to the discovery data and not have to rely on operations to do a data call and wait weeks for the results.

Software usage

It is one thing to discover that a software package or suite is installed, but it is equally important to discover whether the software package has been used or not. Why pay for more licenses if the organization has ones that are unused? Why pay for ongoing maintenance or SA on software that is not being used? Knowing whether a software package has been used and when is very important to better managing software and maintenance, an increasingly large part of most IT outlays.

Have you tried using SCCM for software usage reporting? SCCM calls this [software metering](#), and it requires the administrator to specify the file(s) to be monitored and then wait for six, nine or twelve months to see the results for that file. Hardly encouraging when you need an answer today.

Why not consider using a system that automatically discovers when all software packages have been last used so that software can be either reused or removed?¹

License keys & IDs

SCCM does not automatically discover license keys and IDs. Even if your SCCM admin writes special scripts to make an attempt, the results are probably incomplete. Why are license keys important? If you have OEM licenses on some desktops, you need to treat those differently than those covered in your enterprise agreement. The same holds true for licenses purchased from third parties not part of your EA agreement. If your organization has multiple groups purchasing software, it will be very useful to have license keys to be able to true up those agreements.

Non-Microsoft software

SCCM does software discovery by first setting the file types to be discovered, i.e. exes or dlls, for example. It then joins these discovered files to the SCCM [Asset Intelligence Catalog](#) to try to determine the correct software package and version that is actually installed.² There will be an enormous number of files returned for each host machine, but this will be relatively

¹ Belarc was awarded [US Patent 8473607](#) in June 2013 for “System and method for software usage discovery”.

meaningless unless the exact file is also in the Asset Intelligence Catalog downloaded from Microsoft. This is unlikely to be the case for any custom or GOTS software, so these packages will be very difficult to identify.

Some common software, such as Oracle databases and applications, are not discovered by file types. In this case SCCM does not discover this software or any details about it. This can lead to very costly licensing errors, such as when the software licensing group has licensed Standard Editions and the vendor audit finds that Enterprise Editions have been installed. This same situation applies to some expensive CAD or graphic design tools.

It's not just software

Licensing needs data on all Virtual Machines and how they map to the physical servers. This is required for most server software, such as SQL Server and Oracle databases and many CAD packages. In addition for licensing these products you will need the CPU type (for core factor calculations) and the number of cores assigned to each VM guest and VM host. Many organizations have VMs which run on Linux and other Unix operating systems. Although SCCM 2012 supports these operating systems, the non-Microsoft clients are not an “out of the box” experience.

For ITAM purposes you also want to know about all of the network attached devices, such as network printers, IP phones, etc. and get details such as make, model and serial numbers of those devices. Although SCCM has a [network discovery](#) feature, you can only run one discovery rule, i.e. for printers, at a time, and they are very complex to set up. In addition, the network discovery only returns the IP and MAC address and does not discover the device's details such as make, model or serial number, making it less than useful for ITAM purposes.

Access to the data

What about giving the software licensing group direct access to SCCM inventory data so they can view it on a regular basis? This is unlikely to happen. SCCM data is typically only available to the SCCM administrators. If software licensing needs access to this data they must ask the SCCM administrators to supply it.

SCCM reports are based on SQL Server report builder, and although there are a fair number of standard reports, it helps to know SQL to modify or link additional information to these reports. In addition the reports can

² SCCM [software inventory settings](#) details.

only be opened on a computer that has SQL Server reporting services and the proper rights.³

Belarc's system publishes its information on the Belarc server as Web-based reports. This architecture also allows for easy sharing and access to the information by both local administrators and regional and headquarters IT staff. The contents of the reports are automatically tailored based on each user's login, so that the user will only see information relevant to their area of responsibility.

Timeliness

We started the discussion by showing a common scenario where software had been installed without the software licensing group being made aware of it. The SCCM data was either out of date or did not discover the software at all. This is what happens when the discovery system runs only occasionally and the data is not readily available to the software licensing group.

The need for continual monitoring of installed software and changes cannot be over-emphasized. Belarc's products automatically update the detailed discovery of all software, hardware and security configurations on a daily basis and create a central repository with the data. For details, see the Belarc architecture description below.

Enterprise wide WAN-based architecture

Most IT management and inventory products operate on the local networks or Domains. This is useful for the local administrators so that they can manage and access the information on the computers they are responsible for. However if the goal is to license software on an enterprise wide basis, this approach is not very useful. This is because in the case of enterprise wide licensing the information needs to be aggregated across many different networks and Domains, and this will require much manual effort. If your organization is geographically distributed, this effort to aggregate the computer configuration data can become overwhelming.

This is the reason that Belarc uses a WAN based architecture vs. the traditional LAN based or hierarchical architecture. The following figures show

the difference between the two approaches. Traditional hierarchical architecture is shown in Figure 1, below.

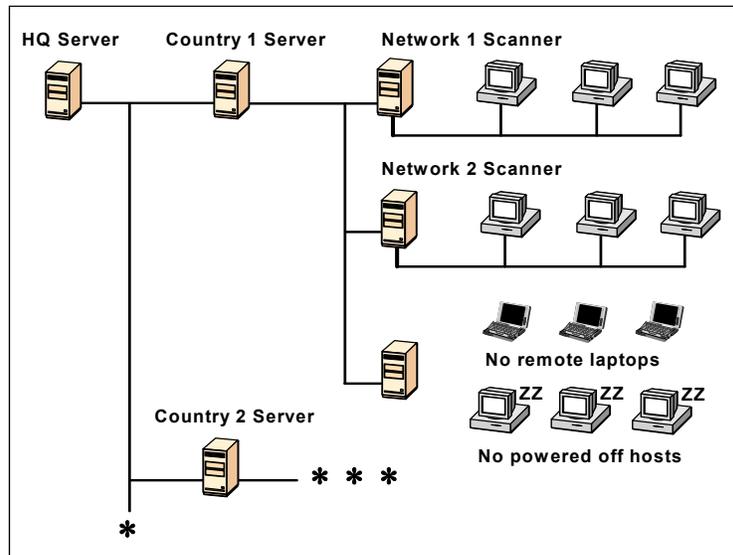


FIGURE 1. Traditional hierachical architecture

WAN-based Architecture

Belarc's system was designed to operate over the enterprise's WAN. Belarc's WAN-based architecture is based on lightweight data-gathering agents which use the enterprise's Intranet and requires only one server and a single database (see Figure 2). The agents communicate directly with the server, avoiding the need for a hierarchy of servers and replicating databases.

This architecture allows for very easy system roll out and extremely low ongoing maintenance. This is because there is no need to install and maintain local server and databases. Belarc's products also use the enterprise's existing Intranet network and standard protocols, so that there is no need to manage special router settings across our customer's network. There are also substantial automation features built into Belarc's products which eliminate the need for the manual efforts required by other systems.⁴

Mobile devices are becoming ever more useful and pervasive in today's enterprises. Belarc's WAN based architecture is ideally suited for mobile devices because these devices natively use the WAN to communicate with

⁴ For further comparison data please request a copy of our white paper, "Belarc and Microsoft SCCM" by sending an email to info@itamsoft.com

the enterprise's IT resources. For example, when remote laptops connect to the enterprise network, Belarc's client will automatically upload their profiles to the enterprise's Belarc server. No additional infrastructure or setup is required.

Another major benefit of Belarc's WAN architecture is that it automatically creates a central repository, or Configuration Management Database (CMDB). Belarc's CMDB is automatically updated, usually on a daily basis, with the correct information. This obviates the need for gathering data from multiple sources in the federated CMDB approach.⁵

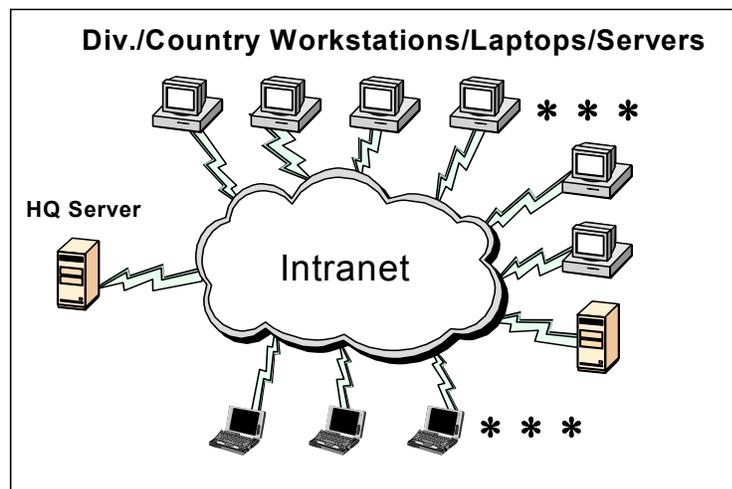


FIGURE 2. Belarc's WAN-based Architecture

By publishing information on the server as Web-based reports, this architecture also allows for easy sharing and access to the information by both local administrators and regional and headquarters management.⁶ The contents of the reports are automatically tailored based on the user's login, so that each user will only see information relevant to their area of responsibility.

⁵ A CMDB is an integral part of the Information Technology Infrastructure Library (ITIL). ITIL is a set of best practice processes to allow organizations to offer high quality and cost effective IT services.

⁶ CAC/PKI secure logins are supported and operate with the DoD and U.S. Federal government CAC/PKI standards.

Enterprise-wide scalability

A properly designed WAN-based system with instrumented end-points, or agents, can scale to any enterprise's size.⁷ What helps make this architecture successful for the enterprise are the following:

- Use of the enterprise's existing Intranet network, which is usually pervasive throughout the organization. This allows configuration data to automatically upload to a central server and repository without the need to manually configure firewalls and routers.
- Small payloads of configuration data. Naturally if an application is using the WAN it needs to be very efficient and limit its use of network resources.⁸
- Efficient database storing and retrieving. With a single central repository actively receiving and storing hundreds of thousands of configuration profiles each day, this can become a bottleneck, unless it's properly designed.

Ease of deployment and maintenance

To deploy a WAN-based system only requires setting up the central server and database, and deploying the agents. Since the agents are small (< 1 MB) they can be deployed using Active Directory Group Policies, SCCM, or any other means that the organization uses to install small files.

Once the server is set up and the agents are deployed there is no ongoing maintenance by the local admins and very little by the HQ personnel.⁹ This is in sharp contrast to most LAN based systems, which require substantial local and HQ admin efforts each time they are run.

Proof Positive

Belarc's products have been successfully used by hundreds of both small and large enterprise customers for over ten years. Brief descriptions of how some of our customers are using Belarc's products for software license management are described below.

⁷ Belarc's system at the U.S. Marine Corps is an example of over 120,000 configuration profiles updating on a daily basis. The system runs on average server and database hardware.

⁸ Belarc's agents send typical payloads of under 40 KB.

⁹ The U.S. Marine Corps manages their BelManage system with fewer than one-half an FTE.

- Kindred Healthcare** Kindred Healthcare is one of the largest healthcare providers in the U.S. and operates over 300 hospitals and nursing centers 28 states. Kindred has used Belarc's products for enterprise wide SLM since 2002 on over 25,000 of their servers, desktops and laptops located throughout the U.S.
- USAF 844th CG** The USAF 844th Communications Group covers the Pentagon and Bolling and Andrews AFBs. The 844th CG has been using BelManage for over seven years and currently runs on their 25,000+ IT assets. BelManage was initially deployed in the Pentagon and used for their Microsoft license audit. BelManage helped the 844th CG reduce their Microsoft true-up costs by \$2.7 million annually and was nominated for a Best Practice award for Software License Management. In addition BelManage is being used to help insure that consistent configurations of software are deployed. This helps improve IT security and reduce service desk calls.¹⁰
- US FAA** The US Federal Aviation Administration (FAA) initially deployed BelManage in two of its divisions, ESC and AQS. Upon the consolidation of the IT department, the FAA AIT deployed BelManage to all of its IT assets, totaling just over 57,000 host machines located throughout the U.S. This was accomplished in under 30 days. The FAA is using BelManage and the Data Analytics module for software license management, configuration management and IT security purposes.
- U.S. Marine Corps** The USMC has been using Belarc's BelManage system for over twelve years. BelManage is deployed across the entire USMC world-wide network of over 120,000 computers, including servers, desktops and laptops on both the NIPRNet and SIPRNet.¹¹ For each network, BelManage runs on a single Windows server and Oracle database, and the profiles are updated daily. The system is accessed by hundreds of remote administrators throughout the world. The HQ IT staff uses BelManage for software license management, security audits, software application consolidation, hardware upgrade planning, server consolidation, and day-to-day management of their computer assets. The USMC has found that less than half of one administrator's time is required by their BelManage system.

¹⁰ For a copy of the USAF 844th CG's best practices nomination for SLM, please send an email to: info@itamsoft.com

¹¹ NIPRNet (Normal IP Routed Network, an unclassified but sensitive DOD network). SIPRNet (Secret IP Routed Network, an isolated more secure DOD network).

Summary

Many software licensing groups use Microsoft's SCCM as their primary source of installed and usage data, but is this the best choice? We suggest that this decision be reviewed by each organization's software licensing group for the following reasons:

- License management needs up to date data on all software installs and changes to be able to automatically track authorized and unauthorized changes that occur throughout the organization. Common mistakes such as installing the wrong version of an expensive software package can result in large adverse audit findings.
- Software usage data is important to be able to reassign or remove unused software packages and to help in re-negotiating SA and maintenance agreements. This usage data should be available immediately, not in nine to twelve month's time.
- Detailed discovery of all software packages is important, particularly expensive server, engineering and design software. This naturally includes non-Microsoft software.
- Automatic discovery and dependency mapping of virtual guests and hosts is required. This includes non-Microsoft VMs, running on Linux, Solaris and ESX systems.
- The software licensing group should have direct access to the data, and not have to wait weeks for the data call results.
- And last, but not least, the data should always be up to date.

You may be interested in some of our related white papers: "Software License Management", and "Belarc and Microsoft's SCCM". Please send an email to info@itamsoft.com to receive copies.

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