
LANrev Advanced License Management

 **HEAT** software

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September 7, 2016

LANrev Advanced License Management 1.1 - Documentation Release 3

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LANrev Advanced License Management

Welcome to the LANrev Advanced License Management guide. This document explains some of the more advanced license management concepts for patch management. For basic instructions on how to set up automatic installed software inventory and license monitoring please consult the Getting Started guide. This document assumes that you are already familiar with and know the basics of installed software inventory and license monitoring within LANrev.

Gathering installed software inventory vs. license monitoring

LANrev provides multiple ways of keeping track of what software is installed on client devices. The first method of tracking is by inventorying installed software and the second, more targeted way is via license monitoring. Installed software inventory tells you which applications are installed on particular devices as well as how many devices have that software installed. It is indiscriminate and will report on all applications found on a client device. To obtain this information automatically on a regular basis, customize the agent installer to send in this information in the **Deployment** tab of the LANrev Admin settings or preferences. You can also reconfigure the agent to do so after it has already been deployed by adjusting the inventory server details in the **Servers** tab of the **Agent Settings** command. This information can also be requested on the fly with the **Gather Installed Software** command.

Keep in mind that the installed software inventory data is only as accurate as the last time it was sent in by the agents. If they are not configured to automatically send in this information then it might be outdated unless you manually trigger a **Gather Installed Software** command. You can add the **Installed Software Info Updated** information item to the columns drawer of any computer group to display the date when this data was last updated. LANrev also displays the age for this data in the status bar at the bottom of the **Computers** window when the **Installed Software** section is selected in the details view for a particular target.

The drawback of the installed software inventory is that depending on whether the **Scan for applications** option is selected and which location you have told the agent to scan, it can potentially generate a very large amount of data that can lead to excessive syncing that degrades between LANrev Admin and LANrev Server, degrading the performance of both. If you are managing more than 1000 client devices, we recommend that you do not automatically inventory installed software but use license monitoring to track your installed software instead. Installed software inventory can still be gathered on-demand as needed. If you absolutely must inventory this information automatically on a regular basis then adhere to the following guidelines:

- For Windows clients only inventory installer receipts as almost all applications register themselves with the Add/Remove Programs function.
- For Macs, if you must inventory application executables only scan the Applications folder.
- Implement a custom DatabaseTableSyncDelays.plist file in LANrev Admin to either ignore the installed_software_info table entirely or lengthen its syncing interval, depending on whether access to installed software information is needed. Consult the Optimization Guide for instructions on how to build a custom DatabaseTableSyncDelays.plist file.

Again, remember that this information can always be requested on-demand via the **Gather Installed Software** command.

License monitoring has some distinct advantages over inventorying installed software:

- More targeted than installed software inventory so it consumes less space in the database.
- Tracks both software installation and usage.
- Reconciles licenses owned to inform you of over-installation or over-usage and allow you identify under-utilization of costly software.
- Optionally enforces licensing by terminating excessive launches beyond the licenses owned.
- Blacklists, terminates, and deletes designated prohibited software.
- Saves purchase tracking information, including vendor and maintenance information.

Since license monitoring only tracks specific applications that you have told it to, there is a much lower overhead than with inventorying installed software. If you define 100 license monitoring specifications, LANrev will only report on those 100 applications rather than all executables on the hard disk like installed software inventory would. On most computers, the majority of installed applications are executables that are part of the OS and are of little interest to most administrators. Lets say you want to track 100 specific applications. Depending on the operating system, inventorying installed software to track these 100 applications consumes from 2.5 times to over 13 times as much space in the database compared to tracking it with licensing specifications.

Depending on the operating system, a clean installation has already between 250 and well over 1000 applications. The amount of data tracking all of these preinstalled programs can significantly increase the load on the server if you do not limit the type of installed software inventoried, lengthen the inventory interval appropriately, and adjust the LANrev Admin sync intervals in larger environments. Large amounts of installed software inventory can lead to excessive syncing, particularly if there is a large number of simultaneous LANrev Admin logins.

Another advantage of license monitoring is that it can be offloaded onto another server. Please refer to the LANrev Optimization Guide for details on setting up a separate server for license monitoring. The agent settings allow you specify a separate server address specifically for license monitoring. Resulting software usage reports from license monitoring lets you locate potentially underutilized copies of software that can be removed from some computers and potentially redeployed to others. They can also tell you how often and by how much you are exceeding your licensing so you can decide how much to true up by.

Considerations when defining license specifications

Keep in mind that you can only track usage if an executable file type is chosen, such as Windows Application File, macOS Application Package, or macOS Application File. Non-executable file types are not linked to the physical launching of applications so these cannot be used to detect the usage of software (although they can be used to track its presence).

We recommend that you identify packages by path as the primary criterion whenever possible. We recommend strongly against using only the name or the checksum (or both) to identify software, because both criteria create a lot of processing and disk overhead on the client computers when used alone.

Some examples:

- Ideally, identify the software by its path, which can include the name, for example:

```
Path is C:\Program Files\Microsoft Office\Office15\EXCEL.EXE
```

- When you have a mixture of 32-bit and 64-bit systems, you may want to use an environment variable in the path:

```
Path is %ProgramFilesx32%\Microsoft Office\Office15\EXCEL.EXE
```

- When the executable always has the same name, but the folder name may vary (for example, because it includes the version number), specify the beginning of the path as far as possible and combine that with a name. For example, this specification would cover all versions of Excel:

```
Path is %ProgramFilesx32%\Microsoft Office\Office
Name is EXCEL.EXE
```

Identify software by: Windows Application File

Identify software matching all of the following conditions:

Values from... Path begins with %ProgramFilesx32%\Microsoft Office\Office

Name is EXCEL.EXE

License specification identification criteria accept both OS-based environment variables and LANrev specific environment variables implemented within the agent itself. Please consult the User Guide for a full listing of file and registry path environment variables. Most of these are meant to provide a single variable that can be used to

reference different paths for system files and registry values on both 32-bit and 64-bit versions of Windows.

Computationally, Checksum is the most expensive criterion to evaluate, so we strongly recommend that you only use it together with other criteria and with the **all** setting. (LANrev then automatically evaluates it only for those files that already match all other criteria.) We also strongly recommend that you do not use Name alone as a selection criterion because that, too, can create high CPU and disk loads on clients.

In general, files can be renamed or moved if users have administrative access to their computers. This problem is particularly true on Macs, where most applications are self-contained application packages that can be easily moved without any loss in functionality. Very few Windows applications are self-contained, and most cannot be easily moved without breaking the application. There are some instances under which you may need to accurately track the presence of an application regardless of whether it has been renamed or moved. For Windows applications use Original File Name or Internal Name. These are hard-coded into the binary file itself and cannot be changed. For macOS applications use File Creator or Bundle Identifier for this purpose. Altering either of these requires a certain level of technical knowledge and can lead to a loss in functionality of the application modified, so users typically will not do this.

When populating the right-hand side of an identification criterion, use the Values from button whenever possible to browse to the file of interest so that LANrev automatically populates the file data for you. This ensures that the information is as accurate as possible and prevents typos from manual entry. This may not always be possible though if you do not have the application to be tracked installed in LANrev Admin or the platform of the agents being tracked differs from your admin. In this case, inventory the installed software on an agent that you know has the software of interest installed to remotely get the information needed to build your licensing specification. Send a **Gather Installed Software** command to a client device and copy the relevant data from the **Installed Software** section in the detailed inventory view for that device. In some instances, running a **File Find** or **Search Windows Registry** command will yield the desired data. Add the information items from the relevant table below to the desired sections in the device details view to find the relevant information. Right click the data of interest and choose **Copy "<information_item>"** from the context menu.

The tables below outline how the licensing criteria correspond to information items for installed software or for files. Values for the criteria marked with "Cannot be gathered remotely" can only be retrieved locally with the **Values from** button.

Windows Application File or Windows File

Licensing criterion	Information item for installed software	Information item for file
Name	Inst. Software Name	File Name
Path	Install Location	File Path
File Size	Inst. Software Size	File Size
File Version	Inst. Software Version Number	File Version
Creation Date	–	File Creation Date
Modification Date	–	File Modification Date
Original File Name	Cannot be gathered remotely	
Internal Name	Cannot be gathered remotely	
Product Name	Cannot be gathered remotely	
Company	Cannot be gathered remotely	
Checksum	Cannot be gathered remotely	

Windows Installer Receipt

Licensing criterion	Information item for installed software	Information item for file
Receipt ID	Installer Receipt ID	–

Windows Installed Software

Licensing criterion	Information item for installed software	Information item for file
Name	Inst. Software Name	–
Publisher	Inst. Software Company	–
Version	Inst. Software Version String	–

macOS Application Package

Licensing criterion	Information item for installed software	Information item for file
Name	Inst. Software Name	File Name
Path	Install Location	File Path
Bundle Identifier	Inst. Software Product ID	File Size
File Type	–	File Type
File Creator	–	File Creator
File Version	Inst. Software Version Number	File Version
File Version String	Inst. Software Version String	File Version String
File Build Number	–	File Build Number

macOS Application File or macOS File

Licensing criterion	Information item for installed software	Information item for file
Name	Inst. Software Name	File Name
Path	Install Location	File Path
File Type	–	File Type
File Creator	–	File Creator
File Size	–	File Size
File Version	Inst. Software Version Number	File Version
File Version String	Inst. Software Version String	File Version String
File Build Number	–	File Build Number
Creation Date	–	File Creation Date
Modification Date	–	File Modification Date
Checksum	Cannot be gathered remotely	

macOS Installer Receipt

Licensing criterion	Information item for installed software	Information item for file
Package Name	Inst. Software Name	–

Terminating and deleting applications

Licensing specifications let you terminate applications if they either exceed their license count or have been marked as prohibited. By default there is a 10-second delay before the application is actually closed. This delay is to minimize CPU usage while monitoring the processes list for the applications to be closed. To decrease this interval you must edit the following agent setting:

- `ProcessScanForIllegalAppsInterval` (DWORD/integer): The delay in seconds until the application is terminated.

This can be included in the customized agent installer by directly editing the `DefaultDefaults.plist` file after exporting the customized agent installer in the Agent Deployment Center. If you forget to do this then you can always change it later in the agent LANrev Agent registry key or `com.poleposition-sw.lanrev_agent.plist` preference file:

- Windows (32-bit): `HKLM\Software\Pole Pole Position Software\LANrev Agent`
- Windows (64-bit): `HKLM\Software\Wow6432Node\Pole Pole Position Software\LANrev Agent`
- macOS: `/Library/Preferences/com.poleposition-sw.lanrev_agent.plist`

When an application is terminated, the termination description is displayed to the user launching the application. Leaving it empty will display an empty warning dialog to the user. If you want to terminate an application silently without displaying a message to the user enter the following text into the Termination description field:

- `<<!!DON'T SHOW ALERT!!>>`

The Prohibited Application license type also lets you remove the applications when they are detected. When this happens, LANrev Agent does not uninstall the application but removes it according to the identification criteria at the top of the definition used to detect the application. If you have specified Path then only instances of the application at that path are moved. If you specified Name then all copies of that application, regardless of location, are deleted as long as they have the name specified. If you chose Original File Name as the identification criterion then all copies of that application are removed, regardless of their current location and display name.

License monitoring server settings

There are numerous license monitoring settings that can diminish the performance of your LANrev server if not configured correctly. The license monitoring check interval specified in the **Servers** tab of the **Agent Settings** command affects how often agents check with LANrev Server for newly assigned licensing specifications. It does not, however, affect how often agent re-enforce licensing specifications to check if applications are installed or running and report this information

back to LANrev Server. This is controlled in the **License Monitoring** tab of the server settings in the Server Center.

The **Agent License monitoring disk scans** setting controls on which days, during which times, and how often the agents scan the hard drives to detect installed copies of applications. Assigned licensing specifications reside locally on the agent computers, and this information on installation and usage is tracked and cached even when agents are off the network and have no connection to the LANrev server. The **License monitoring process reports** setting controls on which days, during which times, and how often the agents check to see if the applications specified in licensing specifications are actually open. Note that the intervals and time windows specified here match up to what you see in the History licensing report. The frequency with which this information is reported can affect the performance of your LANrev server. Please consult the Optimization Guide for schedules appropriate for your site size.

By default the LANrev server only keeps the last 1000 entries in the History licensing report. If you would like LANrev to keep more historical license monitoring entries, edit the following value in the LANrev Server registry key or `com.poleposition-sw.lanrev_server.plist` file:

- MaxSLHistoryEntries (DWORD/integer)

This value is located at:

- Windows (32-bit): HKLM\Software\Pole Pole Position Software\LANrev Agent
- Windows (64-bit): HKLM\Software\Wow6432Node\Pole Pole Position Software\LANrev Agent
- macOS: /Library/Preferences/com.poleposition-sw.lanrev_agent.plist

Remember to restart the LANrev Server service or launch daemon for this new setting to take effect.

License monitoring workflows

Below are some sample workflows for making potential software purchasing decisions based on the information provided by LANrev manage license monitoring.

Example 1

1. Check the **Max. Install Count** and **Max. Running Count** columns in the History Summary licensing report to get peak installation and usage information for your monitored applications.
2. Review previous usage in the History report to see how frequently the license count is exceeded for the applications of interest and by how much. Compare these values to the peak installation and usage count.

3. Decide how many seats to add. If your peak installation or usage is 10 seats above your license count but most of the time it averages 3 to 4, then it makes more sense to add 5 seats instead of 10.
4. Decide if you want to enforce licensing to terminate the launch of additional copies above and beyond your license count.

Example 2

1. In the sidebar context menu of the Server Center, choose **License Monitoring > New Software Usage Report** and enter these conditions:

Contains records which match any of the following conditions:

Total Usage Time	is less than	00:15	-	+	
Total Launches	is less than	5	-	+	
Last Launch Date	is not in the last	90	Days	-	+

Any of these conditions could possibly indicate an underutilized copy of the software.

2. Contact the users of these agent computers to find out if they are actually using the application.
3. If they do not, remove the application and reinstall it on other computers where users have requested the same application.
4. Decide if you need to purchase additional licenses or can redistribute existing underutilized ones.
5. If there is a significant number of underutilized copies of some applications, check to see if there has been a reduction in work force. It may make sense to only renew maintenance for a portion of the total seat count for your application. For example, if 20% of the copies found are underused due to workforce adjustments it might make sense to only renew maintenance for 80% of the total seat count.
6. In the sidebar context menu of the Server Center, choose **License Monitoring > New Smart License Specification Group** to find out which purchases are coming up for renewal so you can decide to renew or not.

Use these specifications:

Contains records which match all of the following conditions:

Purchase Maintenance End	is in the next	45	Days	-	+
--------------------------	----------------	----	------	---	---

License monitoring reports

The “Fully compliant” and “Licenses exceeded” reports provide aggregate data on all devices to which you have assigned licensing specifications. To view the same information for individual devices, view the software usage report. A licensing specification appears under “Undetermined licenses” if it has not been enforced by any agents at all, meaning it has been defined but no agents have downloaded it. If all of your licenses appear here even after the license check interval has already passed then it most likely means that license monitoring is misconfigured. The LANrev agents check for newly assigned licensing specification at startup or after the licensing interval has passed (60 minutes by default). Agents normally enforce license specifications immediately after the initial download and on the schedule outlined in the **License Monitoring** tab of the **Server Settings** section in the Server Center.

To find out which devices are missing a particular piece of software, enable the **Track as missing software** checkbox in its licensing specification. Then choose **License Monitoring > New Missing Software Report** from the sidebar context menu in the Server Center and specify the name of your application as the license specification name:

Contains records which match of the following conditions:

License Specification Name MyApplication

This provides a listing of devices that do not have the application installed as defined by the license specification, but it is not a computer group and cannot be used to target software packages. To build a computer group in the Server Center that can be used to target computers missing a particular application, choose **Computer Groups > New Smart Computer Group** with specifications like these:

Contains records which match of the following conditions:

License Specification Name MyApplication

Install Count 0

If you want to target computers that have the application identified in the licensing specification installed, add a smart computer group with specifications like these:

Contains records which match of the following conditions:

License Specification Name MyApplication

Install Count 1